THE CHEMIST AND DRUGGIST

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Subscription Rate, 12s. 6d. per annum. Single Copies, 6d. each. Winter and Summer Issues 1s. each. Post Free.

TOILET SOAPS

THE BEST SELL THE BEST.

Margerison's have largest variety, are milled, and of superior quality. (See Revised Prices and New List, sent on application.)

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EVANS SONS LESCHER & WEBB LTD.

LIVERPOOL and LONDON.

WE OFFER

Acid Acetylsalicylic
„ Citric
„ Hydrobromic
Ammon. Molybdate
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Bismuth Subnit.
„ Subgallate
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Butyl Chloral Hydrate
Citrates (Potassium & Sodium)
Cocaine
Creosote
Eserine
Glycerophosphates
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Mercurials
Methyl Salicylate
Pepsin
Peptone
Quinine Salts
Rochelle Salts
Salol
Santonine
Tannin Albuminate
Terpene Hydrate
Thymol
Yohimbin

Large quantities of these and other Pharmaceutical Chemicals available for prompt or forward delivery.

MAY & BAKER, Ltd.

BATTERSEA - LONDON, S.W.

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NOTICE.

MESSRS. WRIGHT, LAYMAN & UMNEY, LIMITED, beg to announce that in consequence of the heavy and urgent demand for

Wright's Coal Tar Soap

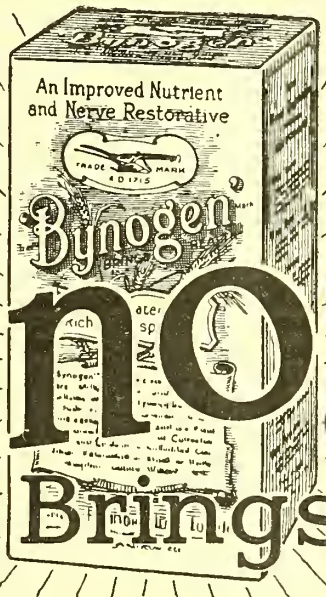
for the BRITISH EXPEDITIONARY FORCE, RED CROSS AND OTHER HOSPITALS, Y.M.C.A., &c., they are compelled to abandon for the moment the bonus for window displays. They trust, this notwithstanding, to have still the active co-operation of their retail friends, and that it may be possible to resume the old arrangement at an early date.

Southwark, London.
August 14, 1916.

The Improved Casein-Glycerophosphate Food

'Bynogen'

Trade Mark



Brings Health

An Easily Digested Nerve Food Rich in Phosphorus

Composition of "Bynogen."

"Bynogen" is a combination of pure Milk Protein, 75 per cent., and specially prepared Dextrin-Maltose, 20 per cent., with 2 per cent. each of the Glycerophosphates of Soda and Lime, and 1 per cent. of Glycerophosphate of Magnesia.

Uses of "Bynogen."

"Bynogen" is indicated in all Enfeebled Conditions, in Convalescence after Severe Illness, Mental and Nervous Exhaustion due to worry or overwork, Insomnia, Physical Fatigue, Wasting Diseases, Anæmia, Digestive Troubles, etc.

"Bynogen" is very helpful to Nursing Mothers for overcoming the strain caused by breast feeding.

Minimum Retail Prices:
1/9 and 3/- per bottle.

Gross Wholesale Prices:
17/- and 29/- per doz. bottles respectively.



A Concentrated Nutrient and Restorative

Advantages of "Bynogen."

"Bynogen" possesses a most attractive flavour and thereby overcomes the objection hitherto experienced in other somewhat similar products.

"Bynogen" strengthens digestion, improves nutrition, and does not cause constipation.

"Bynogen" is delicious when sprinkled on puddings, toast, etc. It mixes readily with milk and other fluids, or it may be eaten plain if desired.

Profit on "Bynogen."

"Bynogen" yields a profit on return of 25% monthly a/c terms. When "Bynogen" forms part of a £5 carriage paid general order for the "Allenburys" Specialities the profit on "Bynogen" is increased to 27½%

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Allen & Hanburys Ltd. Lombard St., London.

A

THE MOST ECONOMICAL INFANTS' FOOD.

TRADE MARK "FRAME FOOD"

ON P.A.T.A. LIST. SHOWCARDS FREE.

FRAME FOOD CO., Standen Road, Southfields, London.

"SOLAZZI" LIQUORICE JUICE

THE CHEMISTS' BRAND.

'The Lancet' says: 'Of Standard Purity'

Recommended also by *The British Medical Journal, Health, The Chemist and Druggist, Food and Sanitation.*

Ask for SHOWCARDS and HANDBILLS. To be obtained of all Wholesale Houses.

LOFTHOUSE & SALTMER, Ltd.

Wholesale & Export Drug Merchants,
Manufacturing Chemists

HULL

INVITE the Trade to take up the following valuable P.A.T.A. Protected Lines, bearing a large Protected Retail Profit, which sell freely and are well known and valued by the Public in many parts of the country.

	P.A.T.A. Protected Retail Price.	Dozen Net.
*LOSALL'S SALT (well advertised), tins	7½d.	5/-
" " " " " "	1/2	10/-
" " " " " bottles in cartons	1/6	12/-

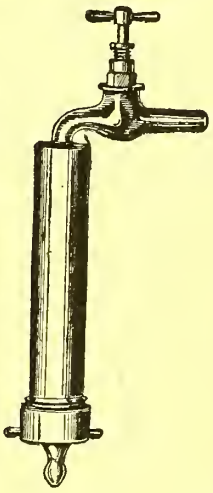
Losall's Salt sells so well, surely it must pay Pharmacists to stock such a large profit-bearing protected line.

LOSALL'S COMPOUND SULPHUR SOAP.

A valuable emollient medicated skin soap, especially suitable for use in Eczema — 1/6 — 12/-

Chemists requiring effective advertising matter for Losall's Salt, &c., will, on application direct to Lofthouse & Saltmer, receive a liberal supply of Dummies, Showcards, Window Slips, Price Tickets, &c., Carriage Paid, whether or no they have an account open with the Firm.

PURE DRINKING WATER.



The Pasteur Chamberland Filter.

OFFICIAL GOVERNMENT STATEMENT:

Wherever the **PASTEUR FILTER** has been applied, **TYPHOID FEVER** has disappeared.

WRITE FOR LIST B.

SOLE MAKERS:

The British Pasteur Chamberland Filter Co.

5 WHITE STREET, FINSBURY, LONDON, E.C.

ONE OF THE ADVERTISEMENTS

which are appearing in the

'TIMES,' 'MAIL,' 'MIRROR,' 'NEWS,' 'DISPATCH,' &c.

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Carriage Paid on One Gross.

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AYRTON'S
Lemonade Tablets



Think what it means to them to have so refreshing a drink made easily available.

Send your soldier some to-day.

AYRTON'S Lemonade Tablets

have this outstanding merit—they are really lemon in concentrated form so that the beverage produced is just like "Home-made" lemonade, not only in appearance and flavour, but also in its valuable tonic properties, all of which are retained in full.

Try them yourself first and prove their value. Just drop a tablet in a tumbler full of water. It dissolves in a moment and makes a perfect glass of lemonade, pleasantly sweetened. Sold in damp-proof and climate-proof boxes, **6d.** at all chemists. If any difficulty in obtaining write

AYRTON SAUNDERS & CO., Ltd., Dept. O, LIVERPOOL.

We are getting retail business from all parts of the country, and where possible are transferring it to our friends who hold stock.

Are you on our List?

AYRTON, SAUNDERS & CO., LTD.

Wholesale Druggists, **LIVERPOOL.**

"PRANA" SPARKLETS

PRESENT PRICES TO THE PUBLIC:

"C" size Syphon - - 5/6. "B" size Syphon - 4/-
"D" Bulbs (per dozen) 2/6 "B" Bulbs (per dozen) 1/8

"D" BULBS REFILLED AT 1/9 PER DOZEN.

IMPORTANT NOTICE TO THE TRADE.

¶ Every empty "D" Bulb returned to be re-filled saves the making of a new Bulb at our Works, and consequently economises both time and material for the production of ammunition.

¶ THE TRADE IS URGENTLY REQUESTED TO ASSIST US IN SUPPLYING MILITARY REQUIREMENTS BY FORWARDING TO OUR WORKS AT ONCE ALL EMPTY "D" BULBS RETURNED BY USERS IN EXCHANGE FOR NEW ONES, & BY REMINDING CUSTOMERS THAT THESE EMPTY BULBS ARE WORTH 9d. DOZ.

¶ As the manufacture of "Prana" Sparklets is necessarily of secondary importance during the War—except for the needs of the British Expeditionary Forces and Red Cross Hospitals—the general requirements of the Trade this Summer can only be met by the co-operation of the Trade itself in returning as many empty "D" Bulbs as possible, without delay.

AERATORS LIMITED

"Prana" Sparklet Works, Upper Edmonton, N.

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"SANOID" BORACIC SOCKS.

MANY Chemists have enjoyed the ready sale of Boracic Socks, which literally

SELL THEMSELVES



NOW is the time to order, so as to enjoy a share of these

READY SALES

3/6 per dozen pairs.

SAMPLE ON APPLICATION.

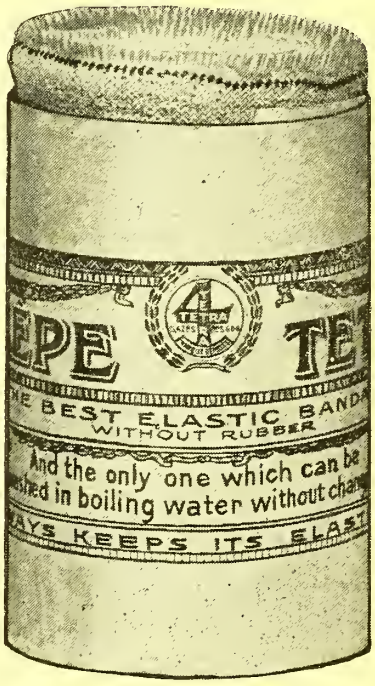
CUXSON, GERRARD & CO., Ltd., OLDBURY.

"TETRA"

CRÊPE BANDAGES

The Crêpe that can be Boiled··

Any article which is worn next to the skin can only be cleansed by boiling. Crêpe Bandages containing wool cannot be boiled as the animal tissue is destroyed and their elasticity is lost.



Tetra Crêpe Bandages are made solely of pure cotton and are the only bandages of this kind which can be boiled in washing. They are soft, durable and reliable in wear, and can be cleansed any number of times.

TETRA RECD. TRADE MARK

TETRA RECD. TRADE MARK

Ten widths in stock, 2″, 2½″, 3″, 3½″, 4″, 5″, 6″, 8″, 10″, 12″. Protected prices ensure satisfactory profit. Attractive showcards supplied to Chemists on request.

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CLEMENT & JOHNSON
19·Sicilian Avenue
LONDON·W·C·



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R. W. GREEFF & Co. offer at lowest prices the following products manufactured in the United Kingdom, Allied and Neutral Countries

(WHOLESALE QUANTITIES ONLY)

Acetanilid
Amidopyrin
Barbitone
Bromide of Ammonium
Bromide of Potassium
Bromide of Sodium
Chloral Hydrate
Cinchonine Sulphate and Muriate
Cinchonidine Sulphate
Citric Acid
Cocain Hydrochlor and Puriss
Cream of Tartar
Creosote Carbonate
Eucalyptus Oil—B.P. 70%
Formaldehyde
Gallic Acid
Glycerophosphates
Guaiacol Carbonate
Heliotropin
Hexamine
Homatropine
Hydroquinone
Isarol (best Ichthyol substitute)
Lithia Carbonate
Lithol (Ichthyol substitute)
Mercurials
Methylene Blue Medicinal
Methyl Salicylate
Peppermint Oil
Pepsines, Pancreatin, Peptone and other digestive Ferments
Phenacetin
Phenazone
Pyrogallic Acid
Potassium Sulpho-Guaiacolate
Quinine and Salts
Quinine Ethyl Carbonate
Salicylate of Soda
Salol
Sugar of Milk
Tannic Acid
Tannin Albuminate
Terpineol
Terpine Hydrate
Theobromine
Thymol Crystals
Vanillin

R. W. Greeff & Co.,

THAMES HOUSE,
QUEEN ST. PLACE,
LONDON, E. C.



MANCHESTER BRANCH:
Lloyds Bank Buildings,
King Street.

ALSO AT

NEW YORK:
R. W. Greeff & Co.,
80, Maiden Lane.

The Vignettes which appear successively in this advertisement indicate the countries from which the products offered are mainly drawn.

POTTER & MOORE'S

Fragrant Old English

Mitcham

Lavender Water.

ESTABLISHED 1749

PROTECTED BY THE P.A.T.A.

OUTLAY.

	£	s.	d.
2 doz. 1/- size at 8/- doz.	0	16	0
2 „ 1/9 „ at 14/- „	1	8	0
1 „ 3/- „ at 24/- „	1	4	0
½ „ 4/3 „ at 34/- „	0	17	0
¼ „ 7/6 „ at 60/- „	0	15	0
	£5	0	0
Less 5% on £5 parcel -	0	5	0
	£4	15	0



RETURN.

	£	s.	d.
2 doz. 1/- size -	1	4	0
2 „ 1/9 „ -	2	2	0
1 „ 3/- „ -	1	16	0
½ „ 4/3 „ -	1	5	6
¼ „ 7/6 „ -	1	2	6
	£7	10	0

Net Profit of £2 15s. 0d. on an outlay of £4 15s. 0d.

SPECIAL TERMS FOR EXPORT ON APPLICATION.

Sole Proprietors:

W. J. BUSH & CO., LTD.

Ash Grove, Hackney,
London, N.E.

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ALL BUYERS OF
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HIGH GRADE
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STERN SONNEBORN OIL CO., LTD.
51 Royal London House, Finsbury Sq., London, E.C.
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Petroleum
Jelly
White, Yellow, Amber,
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Veterinary purposes
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AND
CHEMICALS

Druggists' Sundries, &c. &c.

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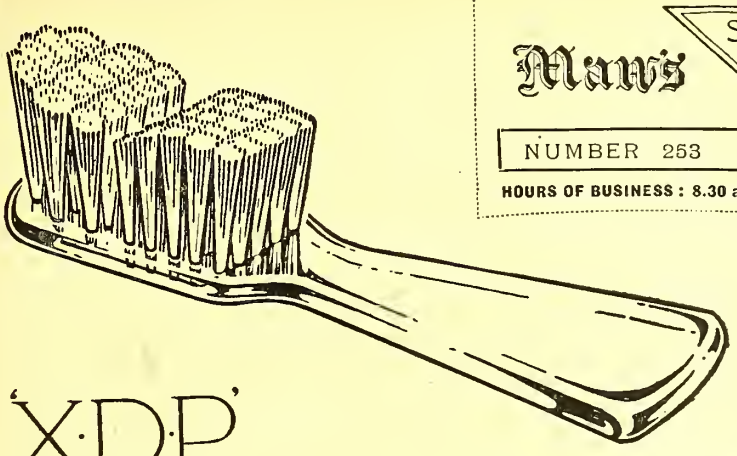
EVANS SONS LESCHER & WEBB
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LIVERPOOL AND LONDON.
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Maw's Page

S. MAW SON & SONS
(GPO BOX No 541)
7-12 ALDERSGATE ST.
LONDON E.C.

NUMBER 253 AUG. 19, 1916

HOURS OF BUSINESS: 8.30 a.m.—5.30 p.m. CLOSE AT 1 p.m. SATURDAYS



'X.D.P'

6/- DOZEN. Dental Plate Brush

Each mounted on a neat white display card, 'X.D.P.' makes a quick-selling little line. The handle of the 'X.D.P.' is of transparent celluloid, and the bristles, white and tough, are set to attain the best cleansing results. Clean and aseptic, and 4 inches long. Every inch good value!

A REMINDER

With the greater part of August gone, the chill days of autumn are again approaching. The coming months are "Hot Water Bottle time," when customers ask for a rubber bottle. If you wish to ensure giving satisfaction, you will see that each rubber bottle you sell bears a red triangle vulcanised on the side with the name "Parex" (Reg.), British Made. They are made in 14 sizes, are double seamed, and ready for delivery when required. But place your order *now*. Prices on request.



HAIR care commences with the employment of the right *Shampoo Powder and Brilliantine, and ends with the use of the* right *Comb and Hair Brush. The* right *Toilet Requisites for this purpose bear the name of "Maw." Your customers will appreciate this fact.*

FRAGRANT OLD ENGLISH LAVENDER WATER

So fragrant and refreshing, and put up in dainty bottles with attractive labels to match, this perfume is more popular than ever (isn't this your experience?); and we have no hesitation in recommending this charming brand.

"One of the best from the House of Quality."



5/- DOZEN.

Thamestown, E.C.

Some time ago the Tsar altered the name of the Russian capital from St. Petersburg to Petrograd. If London, by a stroke of the pen, had been renamed Thamestown, should we by this time have learnt to recognise the largest city in the British Empire by its pseudonym? The mere mention of the name London visualises a homogeneous collection of endless streets, legions of shops, interminable traffic, and hurrying crowds.

We mentally connect London with the affairs of State and Commerce.

. . .

We have seen the substitution of Serbia for Servia. Quite recently the name of a town in Ontario was altered by the general desire of the inhabitants from Berlin to Kitchener.

In our own sphere this Aladdin-like principle of new names for old has made many changes. Pharmacists will remember that a recent edition of the B.P. announced that triticum would in future be known as agropyrum, and at the same time diethylbarbituric acid became barbitonum.

. . .

The association of certain articles with certain titles creates a permanent impression in the human brain. A good example of this sub-conscious connection between mind and matter is found in the expression "Maw Quality." It is a description we have used on many occasions when writing of our leading productions.

In these two words we imply a *tangible* suggestion of something good, and tested, and guaranteed. "Maw Quality" as a descriptive phrase is promptly intelligible to every Pharmacist. It stands for the concerted efforts and achievements of the great lines of this house. *Maw quality* can be implied by no other word than *Maw*.

Capsule

SCHOOL OF PHARMACY

OF THE

PHARMACEUTICAL SOCIETY.

The School provides systematic courses of instruction for the Minor and Major Examinations of the Pharmaceutical Society. Both Courses commence in October, the Minor Course continuing until the end of June 1917.

Arrangements have been made to admit to Special Shorter Courses Students who can satisfy the Dean that they have already received adequate scientific training.

Applications for admission to the School, or for any information respecting it, should be addressed to—

THE DEAN OF THE SCHOOL (Prof. Greenish, F.I.C.), 17 Bloomsbury Square, W.C.

THE

South of England College of Pharmacy

(Concilio et labore)

186 CLAPHAM ROAD, LONDON, S.W.

Principal—H. LUCAS, Ph.C., F.C.S.

THE COLLEGE FOR SUCCESS!

This College provides systematic training in **Pharmacy, Chemistry** and **Botany,** and the Allied Sciences, and prepares Students (ladies and gentlemen) for the **Major** and **Minor Examinations** of the **Pharmaceutical Society** and for the **Assistants' Examination of the Society of Apothecaries.**

NEW COURSES OF STUDY

commence on Sept. 28 for the **Winter** term, and on Jan. 1 and April 2, 1917, for the **Spring** and **Summer** terms.

Evening Classes reform on Oct. 2; Fees from £1 . 1 . 0

For all particulars, prospectus, etc., apply **The Principal.**

PRELIMINARY EXAMINATION for PHARMACEUTICAL STUDENTS

THE College of Preceptors holds Preliminary Examinations in March, June, September, and December. All the Examinations are held in London, Aberdeen, Birmingham, Blackburn, Bristol, Cardiff, Edinburgh, Glasgow, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, and Nottingham. For the June and December Examinations there are other Centres, including Blackpool, Brighton, Carmarthen, Cheltenham, Croydon, Exeter, Margate, Plymouth, Portsmouth, Sheffield, Southampton, Southend, Southport, Sunderland, Weston-super-Mare, and York. For Regulations apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.

CITY of LONDON COLLEGE,

White Street and Ropemaker Street, MOORFIELDS, E.C.

MICHAELMAS TERM commences September 25.

Classes and Laboratory work in **CHEMISTRY.** Special preparation for the Examinations of the PHARMACEUTICAL SOCIETY. Courses on Commercial Products, Metals, Oils, Tea, Textiles.

Full particulars gratis on application to

DAVID SAVAGE, *Secretary.*

LONDON COLLEGE OF PHARMACY

Principal—HENRY WOOTTON, B.Sc. (Lond.)

MINOR. Next full COURSE OF LECTURES & PRACTICAL WORK begins on September 13. Fee to JANUARY Examination, 10 Gns.

MAJOR. January 3. Fee to APRIL Examination 6½ Guineas.

APOTHECARIES' HALL. August 18. Fee, 5½ Guineas per Term.

The number of Students who have passed the Pharmaceutical Examinations from the London College since its establishment exceeds that from any other School.

DEPARTMENTS OF THE COLLEGE INCLUDE:

TWO LARGE CHEMICAL LABORATORIES FOR MINOR Students.

SEPARATE CHEMICAL LABORATORY FOR MAJOR Students.

BALANCE ROOM, convenient to both Laboratories.

LARGE LECTURE ROOM.

PHARMACEUTICAL LABORATORY.

HISTOLOGICAL LABORATORY.

PHYSICAL LABORATORY.

SEPARATE CLASS ROOM AND MUSEUM FOR WOMEN Students.

BOTANICAL GARDEN stocked with Medicinal and Herbaceous Plants.

The College may be inspected by intending Students any day from 10 a.m. to 5 p.m., or Saturdays, 10 a.m. to 12 noon.

For Prospectus, &c., apply to the Secretary,

LONDON COLLEGE OF CHEMISTRY & PHARMACY, 361 CLAPHAM ROAD, LONDON, S.W.

WESTMINSTER COLLEGE OF PHARMACY

The Oldest Established Private School of Pharmacy in England. *Telephone*: **Brixton 1728.**

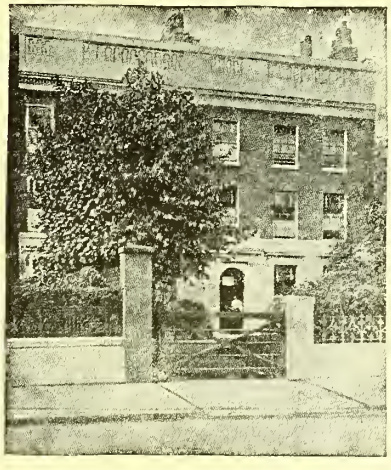
Principals: G. S. V. WILLS, Ph.C., &c. P. H. WOODNOTH, M.P.S.

Students wishing to ensure success in October should enter College at once.

Benches are now being booked for

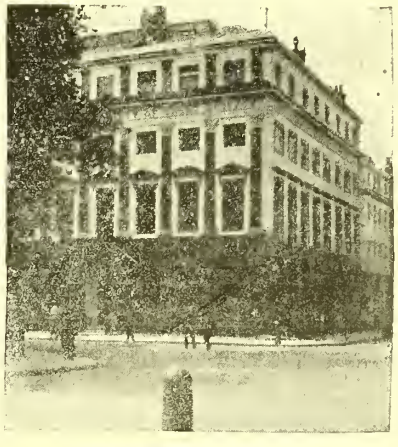
The October Examination...	Fee	£5	5 0
September 6 ... Fee to the January Examination		10	10 0
October 4 ... " " " "		8	8 0
Apothecaries'—Three Months £5 5 0 ...	Six Months	8	8 0

More Students have passed the Pharmaceutical Examinations from this College than from any other School or College.



WESTMINSTER COLLEGE.

There is a short cut from the Westminster College to Bloomsbury Square, and any student can become a Qualified Chemist if he only **WILLS** it.



BLOOMSBURY SQUARE.

Students entering this College can rely upon obtaining a Thorough Training in all subjects for their Examination.

APRIL EXAMINATIONS—
TWENTY-THREE WESTMINSTER STUDENTS PASSED (Minor 12, Hall 11).

JULY EXAMINATIONS—
TWENTY WESTMINSTER STUDENTS PASSED (Minor 4, Hall 16).

FULL APOTHECARIES' COURSE COMMENCED AUGUST 16.

Apparatus and Books provided free of cost.

Since the beginning of 1916 Forty-five Ladies have qualified as Dispensers from this College

WILLS'S UNIVERSAL POSTAL SYSTEM — Fee £1 1s.

There are Courses for the MAJOR, MINOR, PRELIMINARY, APOTHECARIES' HALL, FAIRCHILD, BELL'S SCHOLARSHIP, etc.

The following are extracts from three letters recently received:

1. Students who wish to pass the Minor economically and quickly should follow my example—*i.e.* take Mr. Wills's Postal System, Course C, and then run up to the College for a month or two to finish off. I did this at the October Examination, and passed easily. I experienced no difficulty after the thorough systematic course I had been through under the Postal.—F. J. D.

2. I am writing to tell you how much I have appreciated your Postal lessons. Sorry I cannot continue them, as I have joined the Army. Should I return safely I will place myself again in your hands, as I can see by the past it would be impossible to do better. Your lessons are a pleasure to read, and very comprehensive.—A. G. W.

3. You will be pleased to hear that I have passed the Examination held this month. Thirty candidates presented themselves, and only nine passed, and I am one of the fortunate ones, thanks to your lessons, &c.—F. A. F.

N.B.—"Students who are unable to attend a School of Pharmacy will find Wills's Universal Postal System a useful means of obtaining a thorough grounding in all the required subjects."—*British and Colonial Druggist.*

For Prospectus, &c., Call, Write or 'Phone to the SECRETARY, 402 Clapham Road, London, S.W.

ELT'S COLLEGE

North Finchley, London, N.

¶ The situation of the College, near one of the Garden Suburbs of North London, is ideal for study.

¶ The College Buildings consist of five Laboratories, and are magnificently furnished with modern apparatus. The building is lighted throughout by electricity. The Botanic and Materia Medica Garden is one of the largest in the country.

¶ The College has thorough, systematic and modern Postal Courses for Prelim., Minor, Major, and Apothecaries' Hall Examinations.

In consequence of the great success of the College, the bench accommodation has been doubled. A special Laboratory has also been arranged for Lady Students preparing for the APOTHECARIES' HALL EXAM.

Send to the Secretary for the Little Red Book, with full p rticulars of Day Classes, Evening Classes, Postal Courses, and ensure your

CERTAIN SUCCESS

THE NORTHERN COLLEGE OF PHARMACY

100-102 Burlington Street, Manchester.

Telephone: CITY 7698.

Principal—E. GOWER BRYANT, F.C.S., Ph.C. Tutor for Apothecaries' Hall Students—Miss E. ROSE, M.P.S.

¶ The Northern College of Pharmacy is one of the oldest established of its kind. Its reputation, always good, is still rising, as is proved by increasing numbers of applicants for entry.

¶ Well lighted and scientifically ventilated buildings, situated in the healthiest, most accessible part of Manches er, near comfortable, inexpensive lodgings, help to make "The Northern" a favourite College.

¶ The equipment is up-to-date, complete in every detail that can help the student in practical work. We c allenge comparison and invite investigation.

¶ **Lately, special arrangements have been made for ladies. This profession offers great inducements to them. Send for free book, "Lady Dispensers."**

¶ PART TRAINING CLASSES COMMENCE SEPTEMBER 5 and 6, 1916. An hour daily and a half-day monthly for twelve months enables anyone to obtain a good grounding in matters Pharmaceutical—an excellent preliminary step for the Minor Examinations.

¶ THE NEW COURSE OPENS SEPTEMBER 4, 1916. Classes for Apothecaries' Hall Examination, August 24. Whenever possible lectures are illustrated by lantern slides. Everything is done, without sacrificing thoroughness, to make work a pleasure.

¶ Students training at home find the NORTHERN POSTAL COURSE clear, interesting and practical. It is the best, most comprehensive and thorough postal training course devised. Investigate this. SEND FOR POSTAL BOOKLET. THIS COURSE CAN BE BEGUN NOW.

¶ Consider this! The Northern Cou ses are inexpensive. Every student receives personal attention. The College Pass List since the present Principal has been associated with the College has averaged 70 %, of whom 54 % passed at first attempt.

¶ Send for Prospectus or any other information TO-DAY, while you think of it. All communications addressed to the Secretary will be promptly answered.

THE BATH AND WEST OF ENGLAND COLLEGE OF PHARMACY.

Principal: DAVID J. WILLIAMS, F.C.S., Ph.C., Silver Medallist.

A THOROUGH PHARMACEUTICAL EDUCATION.

SPECIAL FEATURES

FULL EQUIPMENT.

The School is completely fitted in accordance with modern requirements (see Illustrated Prospectus).

EXPERT TUITION.

The Teachers devote their whole time to the study and tuition of their special branches, and thus up-to-date methods are always to the front.

SPECIALISATION IN PRACTICAL SIDE

of all Sections. While a maximum amount of time is set aside for Laboratory work, Lectures are further illustrated wherever possible by experiment.

ECONOMY.

It has been proved that a saving of upwards of THIRTY PER CENT. in total outlay is secured owing to comparative cheapness of living and absence of other expenses.

HEALTHY SITUATION.

The School is situated in a suburb of the well-known health resort.

SUCCESS.

The high percentage of successes speaks for itself.

LADIES' CLASSES—Aug. 21 and Nov. 1.

SPECIAL REVISION COURSE	Aug. 21	ORDINARY MINOR COURSE	Oct. 3
LONG MINOR COURSE (with month's Preparatory)	Sept. 6	MAJOR COURSE	Oct. 3
		APOTHECARIES' HALL COURSE	Aug. 21 and Nov. 1

SUCCESSES

AVERAGE PHARMACEUTICAL SUCCESSES DURING PAST 9 YEARS FOR EACH EXAM. **75%** AVERAGE PHARMACEUTICAL SUCCESSES DURING PAST 9 YEARS FOR EACH EXAM.

ALL STUDENTS PRESENTED PASSED—

AT MINOR on THREE OCCASIONS AT MAJOR on THREE OCCASIONS

AT APOTH. HALL on THREE OCCASIONS during last four years.

At these **9** Examinations there were **51** entries from this School and **51** Passes.

CORRESPONDENCE COURSES.

In addition to the DAY and PART-TIME Courses, this form of tuition is undertaken for Minor, Major, Apothecaries' Hall, Scholarships, and Preliminaries. The method adopted is original, and ensures

INDIVIDUAL ATTENTION AND SUCCESS.

REMARKABLE SUCCESSES

1908 Fairchild Prize ... ... MR. B. HALL, Cardiff.
1909 Fairchild Scholarship ... MR. B. HALL, Cardiff.
1910 Fairchild Prize ... MR. C. HUGHES, Cardiff.
1911 Fairchild Prize ... MR. W. COOPER, Bath.
1912 Fairchild Scholarship ... MR. W. J. DAVIES was bracketed first with another.
1914 Fairchild Scholarship MR. F JOTCHAM, Bath.
1914 Fairchild Prize ... MR. H. I. JENKINS, Cardiff.

1915 Fairchild Prize £5 - MR. R. LLOYD, Cardiff.

£155 won in this Scholarship in eight years.

TEN PER CENT. REDUCTION in College Fees to Correspondence Students on entrance.

FOR ILLUSTRATED PROSPECTUS AND TERMS APPLY—

The Secretary, BATH COLLEGE OF PHARMACY, 6 Cleveland Place East, Bath.

LIVERPOOL SCHOOL of PHARMACY

Recommended by the LIVERPOOL CHEMISTS' ASSOCIATION. | Principal: H. HUMPHREYS JONES, Ph.C., F.C.S.

Full Time Classes

Revision Course for the October Examination — August 16
Minor Course for Jan. & April Examinations — Sept. 12
Apothecaries' Hall Examination . . . . — August 16

Part Time Classes

Held on **Tuesdays & Wednesdays** (3 to 10 p.m.), commencing Sept. 12 & 13 respectively. A full course of instruction is given in "**Minor**" **Subjects**, Practical and Theoretical. The whole Syllabus is covered during the Session **Sept.-June**. **Scholarships, free of charge,** entitling their holders to a full course of instruction are offered to **part-time** students who have attended the whole Session.

Write for Syllabus, which contains valuable information in the form of Volumetric Equations, Thermometric Data, % Calculations, &c., Post Free, **from The Principal, 18 COLQUITT STREET.**

BIRMINGHAM & MIDLAND

COLLEGE OF CHEMISTRY, PHARMACY AND BOTANY,

45 NEWHALL STREET, BIRMINGHAM.

Principal—C. L. SCOTT, Pharmaceutical Chemist.

A short Special Course for the October Examination begins on August 21.

Next Term begins on October 3, when the Evening Classes resume.

Full Particulars will be sent on Application.

Founded 1882. Founded 1882.

MANCHESTER COLLEGE OF PHARMACY

292 Oxford Rd., Manchester.

The Oldest Established Provincial College.

Principals { HARRY BRINDLE, F.C.S., Ph.C. / CHARLES TURNER, F.C.S., Ph.C.

A FEW ADVANTAGES.

All the tuition given by the Principals only. New premises fitted with the latest Apparatus. Extensive Botanical Garden stocked with medicinal plants. Individual attention given to all Students. Intending Students and friends are cordially invited to call and inspect the premises of the College.

CLASSES ARE HELD FOR THE **MINOR, MAJOR AND APOTHECARIES' HALL EXAMS.**

Special arrangements for Ladies.

Over 300 Ladies have qualified from the M.C.P.

Prospectus sent post free on application.

AN EXCELLENT OPPORTUNITY FOR WOMEN.

British Optical Institute, Limited

FERN LODGE, 20a GROVE ROAD, BRIXTON, S.W

TECHNICAL INSTRUCTION IN OPTICS.

Day and Evening Classes during Term time, in preparation for al Optical Examinations, under the supervision of the Principal, assistec by Mr. H. Firth, F.B.O.A., F.S.M.C. (1st Prizeman). Well thought-ou and successful Postal Courses for Provincial, Colonial and Foreigi Students.

CLINIC, EXPERIMENTAL & LABORATORY WORK.

As Women are now needed in the Optical Profession to replace mer called up on active service, special short Courses of Study, witl abundant opportunities for practical work, are being held continuousl at the Institute to fit women for an occupation so eminently suited t their capacities.

For further particulars and fully detailed Prospectus, apply to the **Principal, Dr. MAX COQUE, B.Sc.** (Telephone: Brixton 677

Miss Margaret E. Buchanan, Ph.C., M.P.S.,

AND

Miss S. J. Heywood, Ph.C., M.P.S.,

CONTINUE TO

TRAIN LADIES IN PHARMACY

Hospital and Business experience arranged for as Students desire, and according to suitability.

Short Courses in Special Coaching can be arranged.

Students have taken the Pereira Medal, Fairchild and Hewlett Exhibitions.

Address, by letter in first instance,

Gordon Hall, Gordon Square, LONDON, W.C.

County Borough of West Ham.

Municipal Technical Institute

Romford Road - - WEST HAM, E.

CHEMICAL DEPARTMENT.

An Evening Course of Lectures in Pharmacy, Materia Medica, Chemistry and Botany, with practical work, will commence on Monday, September 25, 1916.

The Course is designed to meet the needs of those preparing for the Minor Examinations of the Pharmaceutical Society, and the Assistants' Examination of the Apothecaries' Society.

For particulars apply to the Principal.

George E. Hilleary, *Town Clerk.*

THE MANCHESTER MUNICIPAL

SCHOOL OF TECHNOLOGY

Principal: J. C. M. Garnett, M.A. (late Fellow of Trinity College, Cambridge).

The Session 1916-17 will open on September 18th.

The Prospectus of Part-Time Courses in Chemistry and Chemical Technology, forwarded free on application, contains particulars of a SPECIAL COURSE which has been arranged for

STUDENTS OF PHARMACEUTICS.

This Course, which prepares Students for the Minor Examination of the Pharmaceutical Society of Great Britain, is held on Wednesdays and extends over two years.

The First Year Course of Study is arranged to prepare Students for the Examination for the Manchester Pharmaceutical Association Scholarship which is held on the third Tuesday in June.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE,

NEWCASTLE-UPON-TYNE.

The Degrees in Medicine, Surgery, and Hygiene, the Diploma in Public Health, the Diploma in Psychiatry, and the Licence in Dental Surgery of the University of Durham are open to men and women.

The WINTER SESSION, 1916-1917, will be commenced on Monday, October 2.

Students can complete, at the University of Durham College of Medicine, Newcastle-upon-Tyne, the entire course of professional study required for the above degrees and for the Diplomas in Public Health and Psychiatry; also for the examinations of the Royal Colleges of Physicians and Surgeons, and for the Army and Navy Examination Boards.

SCHOLARSHIPS, &c.—University of Durham Scholarship, value £100—for Proficiency in Arts, awarded annually to full Students in their first year only. Pears Scholarship, value £150—for Proficiency in Arts. Dickinson Scholarship, value the interest of £400 and a Gold Medal—for Medicine, Surgery, Midwifery, and Pathology. Tulloch Scholarship, value the interest of £400—for Anatomy Biology, Chemistry, and Physics. Charlton Scholarship, value the interest of £700—for Medicine. Gibb Scholarship, value the interest of £500—for Pathology. Goyder Memorial Scholarship (at the Infirmary), value the interest of £325. Luke Armstrong Scholarship, the interest of £680—for Comparative Pathology. Stephen Scott Scholarship, the interest of £1,000—for Surgery. Heath Scholarship in Surgery, of the value of £200, awarded every second year. Gibson Prize, the interest on £250 Stock—for Midwifery and Diseases of Women and Children. Outterson-Wood Prize, the interest of £250—for Psychological Medicine. Turnbull Prize and Medal, for Surface Anatomy. At the end of each Session a Prize of Books is awarded in each of the regular classes.

In the Royal Victoria Infirmary accommodation is provided for over 400 patients, and also for the study of the various special subjects.

Practical Midwifery can be studied at the Newcastle Maternity Hospital, where there is an outdoor practice of about 1,000 cases annually. Lectures are given on Psychological Medicine in the College of Medicine, and Clinical instruction at the Northumberland County Asylum. Special Courses of Instruction in Outdoor Sanitary Practice and in the Hospital for Infectious Diseases are given by the City Medical Officer of Health.

FEES.

(*a*) A Composition Ticket for Lectures at the College may be obtained—

1. By payment of 80 guineas on entrance.

2. By payment of 50 guineas at the commencement of the first year and 40 guineas at the commencement of second year.

3. By three annual instalments of 40, 33, and 22 guineas respectively at the commencement of the sessional year.

A Composition Ticket for the Courses of Lectures and Practical Work of the first two years of the Curriculum may be obtained by the payment of 42 guineas on entrance.

(*b*) Single Courses of Lectures, 5 guineas.

(*c*) Fees for attendance on Hospital Practice—

One Month	2 guineas
Two Months	4 ,,
Three Months	6 ,,
Six Months	10 ,,
One year	15 ,,

A Composition Ticket for three years may be obtained—

I. By a single payment of .. 35 guineas

II. By two payments of First Year 20 ,,
Second ,, 18 ,,

In addition to the above fees, the following are payable to the Financial Secretary of the Royal Victoria Infirmary, viz.: (*a*) for six months, or any shorter period, of Hospital practice, 1 guinea; (*b*) for twelve months, or longer, 2 guineas annually. (After three years attendance this annual payment ceases.)

(*d*) Composition fee for Lectures, &c., at College for Licence in Dental Surgery, 40 guineas; Composition fee for Practical work at Dental Hospital, 43 guineas.

(*e*) Composition fee for Courses of Instruction for the Diploma in Psychiatry, 25 guineas.

Fees for Lectures, &c., at the College and for Hospital Practice must be paid to the Secretary, and fees for Practical Dental Work to the Dean of the Dental Hospital at the time of entry.

Further particulars may be obtained from Professor HOWDEN, Secretary, at the College.

THE

EDINBURGH CENTRAL SCHOOL of PHARMACY

26 Clyde Street, Edinburgh.

Founder—W. BEAVERLY-COWIE, Ph.C., F.C.S.
Principal—A. A. W. CUTHBERTSON, Ph.C.
ASSISTED BY COMPETENT DEMONSTRATORS.

This School was founded in 1895, and during the period of twenty years over Twelve Hundred Students have been trained for the Minor and Major Examinations.

Students of this School have been consistently provided with a Systematic Training in the Elements of the required Subjects, and to this is due the High Percentage of Successes at the Official and Auxiliary Pharmaceutical Examinations.

The Short Revision Course starts on Aug. 23.
The Winter Session starts on Oct. 4.

For Full Particulars apply to
A. A. W. CUTHBERTSON, Ph.C.,
26 Clyde St., Edinburgh.

University of Manchester

SCHOOL OF PHARMACY.

Lecturer in Pharmaceutics: JAMES CRIER, M.Sc., Ph.C.

Courses for the Minor and Major Examinations.

These Courses extend over six or nine months. **Composition Fee:** For six months, **£15 15s.**; for nine months, **£19 19s.** Arrangements can also be made under certain conditions for one whole day per week. A complete two years' **Part-time Course** for the Minor Examination is given in conjunction with the Municipal School of Technology. (Fees and other particulars on application.) **The Manchester Scholarship** and the **Fairchild Scholarship** are tenable at this University.

Degree Courses for Pharmaceutical Students.

Pharmaceutical Students who have passed the Matriculation Examination of the University or its equivalent may now enter for a Degree Course in Science concurrently with the Courses for the Minor and Major Examinations. Several **Entrance Scholarships** are open to Students entering on these Courses, and are available for competition on the completion of apprenticeship.

SPECIAL COURSES

in **Pharmacology** and in the Chemistry and Microscopy of Drugs are arranged for the Final Examination of the Institute of Chemistry in Branch *(e)*—The Chemistry of Food and Drugs, etc. A three months' course in **Bacteriology** is open to Major Students.

The Session commences in October.

For Prospectus apply to the Registrar.

ROYAL VETERINARY COLLEGE
CAMDEN TOWN, LONDON, N.W.
(FOUNDED 1791)

PROFESSOR SIR JOHN McFADYEAN, M.B.,B.Sc.,LL.D.,M.R.C.V.S.,
Principal and Dean.

The attention of parents and guardians is called to the excellent prospects which the Veterinary Profession offers to young gentlemen of good education.

The demand for Veterinary Surgeons, both for private practice and for public appointments, is greatly in excess of the supply.

Complete courses of instruction are given for the Diploma of the Royal College of Veterinary Surgeons and the B.Sc. Degree in Veterinary Science of the University of London.

Full particulars of Classes, Prizes, Fees, and duration of terms are given in the College Calendar, copies of which may be had on application to— THOMAS C. WIGHT, *Secretary.*

UNIVERSITY OF BIRMINGHAM

Faculties—

SCIENCE, ARTS, MEDICINE, COMMERCE.

SPECIAL SCHOOLS OF LANGUAGES.
DEPARTMENT FOR TRAINING OF TEACHERS.
Schools of
ENGINEERING, METALLURGY, MINING, BREWING, DENTISTRY.
Leading to Degrees and Diplomas.

The Session 1916-17 commences October 3, 1916.

All Courses and Degrees are open to both Men and Women Students.

In the Medical School Courses of Instruction are arranged to meet the requirements of other Universities and of Licensing Bodies.

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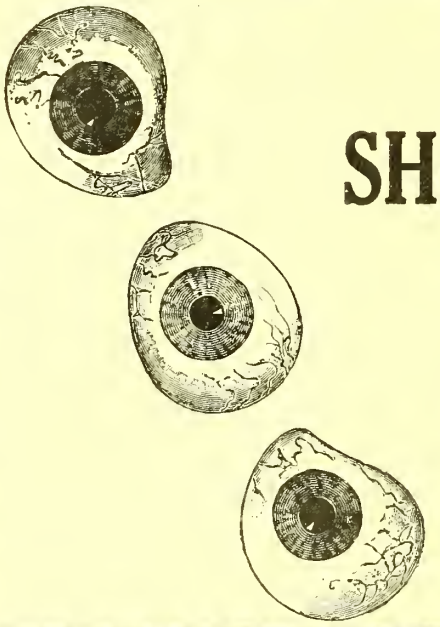
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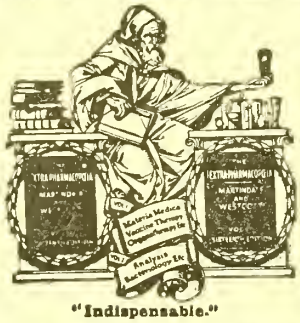
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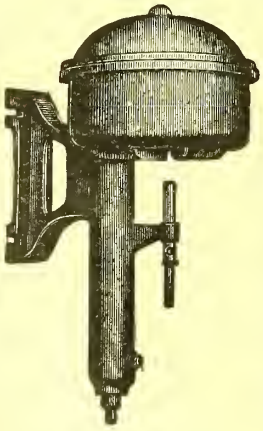
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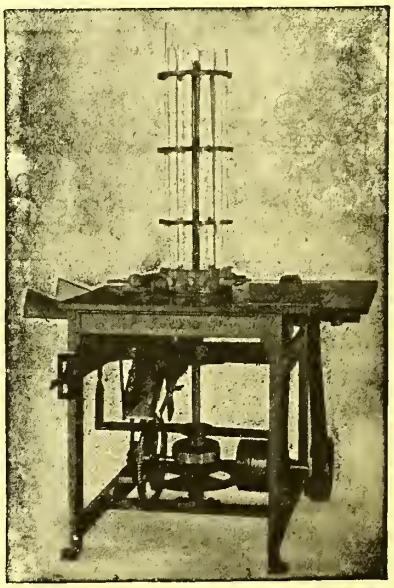
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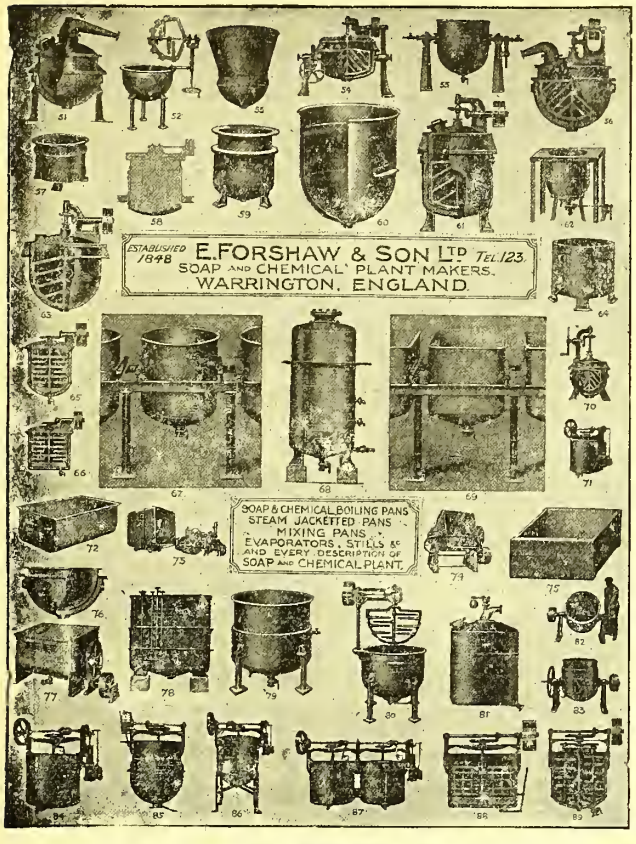
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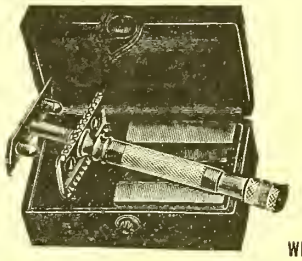
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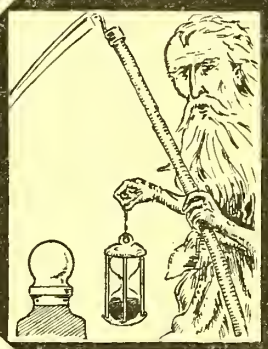
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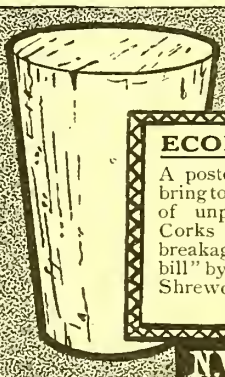
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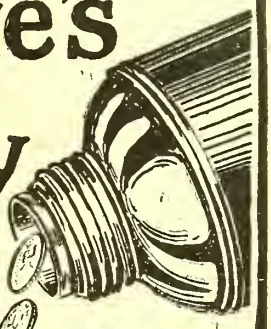


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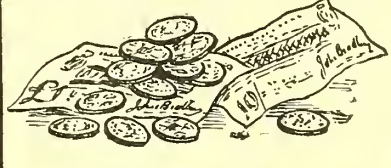
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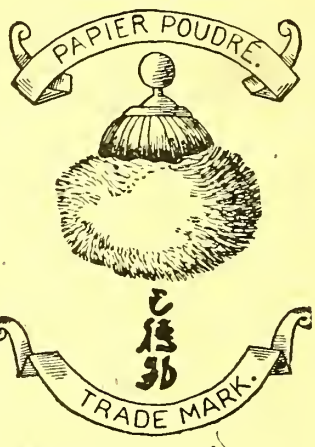
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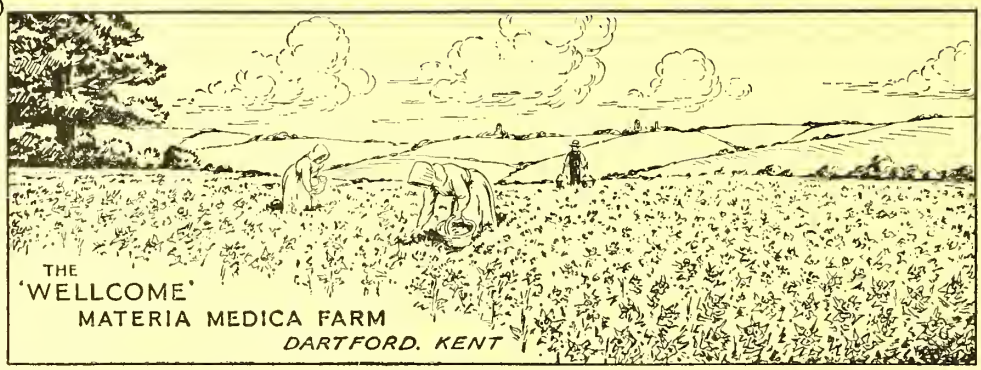
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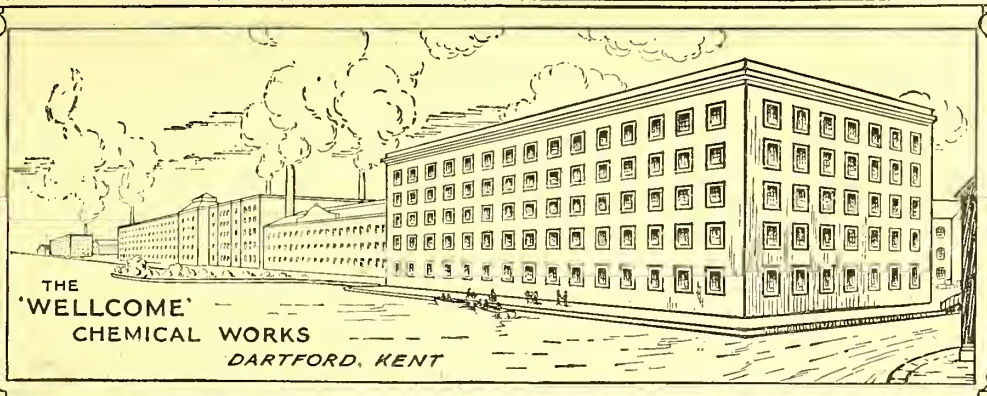
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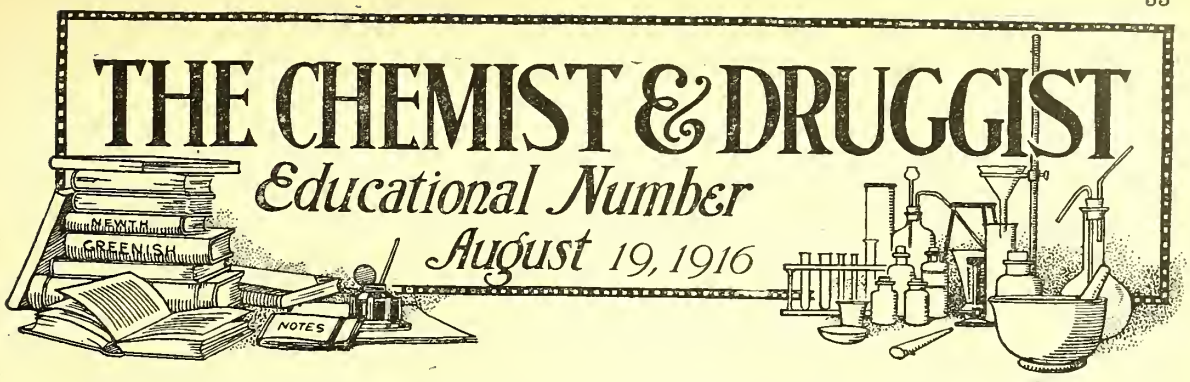
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Editorial Memoranda.

"C. & D. DIARY," 1917.—Our annual *Diary* has, in consequence of war conditions, to go to press somewhat earlier this year, and the work of revision has already commenced. We ask advertisers to assist us with their friendly co-operation in the matter of advertisements by forwarding copy and instructions without delay to the Publisher, 42 Cannon Street, London, E.C. The Editor asks Association Secretaries and others to reply promptly to his requests for information.

KNOWN, ADMITTED, AND APROVED REMEDIES.—Since the Divisional Court of King's Bench gave, in 1903, the important and fundamental decision as to "known, admitted, and approved" remedies, raised in Farmer *v.* Glyn-Jones, we have reserved a space in the *C. & D. Diary* for these formulæ. Our *Diary* was the first book of the kind which the Revenue authorities accepted as an approved book of reference. The space reserved in the 1917 *Diary* for such formulæ will be limited, so that true copies of them, with doses or other directions for use, should be sent to the Editor *C. & D.*, 42 Cannon Street, London, E.C., as promptly as possible.

European War News.

Prohibited Exports and Imports.

NETHERLANDS.—A Royal Decree of July 25, 1916, prohibits the exportation of iron pyrites and distilled products and liqueurs.

SWEDEN.—Casein has been added to the list of prohibited exports.

Military Tribunals' Decisions.

The following have been announced since our last issue:

BATH.—W. G. Chamberlain, dispenser with Cater, Stoffell & Fortt, Ltd., who as a conscientious objector obtained exemption from non-combatant service on condition that he found work of national importance, attended at the Tribunal and reported that he had been unable to satisfy the condition. The Mayor: As you have not complied with the condition the matter goes forward.

BERMONDSEY.—Robert Blackie, chemist and druggist, 168 Tower Bridge Road, S.E., applied for the exemption of five employés, these including a laboratory assistant, a registered chemist, and three dispensers. The four latter were recommended for exemption by the London Insurance Committee, who were represented by Mr. G. A. Tocher, Secretary to the Joint Advisory Committee for the County of London. The laboratory assistant was granted two months' extension. With reference to the remainder, Mr. Tocher said the Joint Advisory Committee for London had decided that they must retain a certain number of chemists and assistants throughout London, and their recommendations had been sent to the Military Representatives. He understood that the War Office had sent representations to the military authorities to come to an arrangement with the Insurance Committee as to how many men are indispensable to pharmacy in London. The Tribunal granted conditional exemption in three cases, but in the case of a married assistant, twenty-four years old, a month's extension. Mr. Tocher asked for an explanation of the latter decision. The Mayor replied it was the decision of the Tribunal that the man should join up. Mr. Tocher said it is his duty to see that there are sufficient men left to carry on this important work in London. The service must be maintained. If the local Tribunal did not grant these men exemptions it is a matter for the Insurance Commissioners and the Army Council.

CROYDON.—Conditional exemption was granted to Herbert F. Rose, assistant with Mr. S. W. Vincent, Addiscombe.

LANCASTER.—The military authorities challenged certificates granting exemption to a chemist and a warehouseman, conditional on their joining the V.T.C. The chemist had promised to join under protest, and his exemption was allowed to stand, but, as the warehouseman was not willing to join, his certificate was cancelled and he was ordered to join the Army.

LETCHWORTH.—Mr. E. E. Russell, chemist and druggist, was granted conditional exemption.

LIMEHURST (LANCS).—Exemption until the end of September was granted to Percy Williams, a window-dresser employed by Boots, Ltd.

LLANFAIR.—J. E. Edwards, with Mr. H. E. Ellis, Ph.C., whose case was down for hearing, stated that the matter

is now before the Insurance Commissioners and the Army Council.

Malmesbury.—Exemption until November 1 was granted to Harold Payne, assistant with Stephen Pettifer & Sons, veterinary chemists.

Middleton.—The Mayor, as Chairman of the local Tribunal, has notified all persons who have received certificates of conditional exemption that they must attend at the Drill Hall for training with the V.T.C. The notice further states that failure to attend without reasonable excuse may mean the withdrawal of the exemption certificate.

Oswestry.—Mr. Robert Reeves, chemist and druggist, was exempted on condition that he joins the Volunteer Corps.

Shoreditch.—Mr. Bernard Arthur Porter, trading as the Standard Chemical Co., manufacturing chemists, 8-9 Whitecross Place, E.C., was granted one month's exemption. He claimed that he was making certain chemical substitutes for potash, etc., by methods only known to two people in the world.

Soham.—Exemption until October 1 was granted to Benjamin Brown, with Mr. C. W. Bobby, chemist and druggist. He is engaged in preparing taraxacum-root for the market.

Upton-on-Severn.—Mr. J. Gibbs, chemist and druggist, applied for exemption of his son, F. V. Gibbs, who is his assistant.—Exemption until November 1 was allowed.

Personalia.

Rifleman C. Holmes, Leeds Rifles, who has been wounded, was with Reynolds & Branson, Ltd., before he was called up for service.

Mr. J. W. Jones, Ph.C., formerly of 47 Southside Street, Plymouth, has received a commission in the Army for general service.

Lieutenant W. Gilbert Saunders, of Ayrton, Saunders & Co., Ltd., Liverpool, contributed a short story to "The Bystander" of August 9. It deals with an incident of the war.

Second-Lieutenant H. Moulden, Royal Garrison Artillery, has been wounded in France. He is the son of Mr. W. H. Moulden, pharmacist, Bingley, Yorks, whose elder son was disabled from wounds about a year ago.

Private James Nicol (19395), Royal Scots, has been reported missing. Private Nicol, before joining up in February 1915, was employed for over seventeen years with Gibson & Co., chemists, 19 South Clerk Street, Edinburgh.

Mr. W. C. Beck Daly, who acted as Australian agent for F. Schutze & Co., Ltd., Black Bull Works, Caledonian Market, London, N., has joined the Forces and is training in this country. His brother, Mr. R. Daly, is filling his position in Melbourne.

Corporal B. J. Vince (son of Mr. James Vince, pharmacist, Cheapside, Lancaster), King's Own Lancaster Regiment ("Pals"), who was severely wounded by shrapnel in the legs at Ypres in May 1915, is permanently crippled and has received his discharge from the Army.

Corporal Oswald M. Hills, who joined the A.S.C. as a private in March 1915, and who was formerly with Mr. J. Milling, chemist, of Northgate Street, Chester, has been gazetted second-lieutenant in the Cheshire Regiment. He has served at the Front.

Lieutenant James Elliot, who recently received his commission in the Gordon Highlanders, has been wounded in action. He is a son of Mr. James Elliot, Brougham Place, Hawick. When war broke out he was a private in the Royal Scots, and all his promotion has taken place since he went to the Front. He was a chemist's assistant in the employment of Pottage & Co., Princes Street, Edinburgh.

Miscellaneous.

A Supplement to the "London Gazette," issued on August 14 contained a complete list, revised up to date, of persons and bodies of persons to whom articles to be exported to China may be consigned, under the terms of the Proclamation of September 24, 1915.

Black-listed Firms.—A further list of 169 firms of enemy nationality or enemy associations with whom persons in the United Kingdom are forbidden to trade has been issued by the Foreign Trade Department of the Board of Trade. It includes the names of 1 Argentine firm, 5 Bolivian, 17 Brazilian, 10 Chilian, 3 Danish, 1 Ecuador, 12 Greek, 3 Japanese, 12 Liberian, 16 Dutch, 13 Dutch East Indies, 11 Norwegian, 4 Peruvian, 3 Philippine Islands, 1 Porto Rico, 3 Portuguese East African, 31 Spanish, 22 Swedish, and 1 Uruguayan concerns.

The Supply of Ammonium Sulphate.—The Board of Agriculture states that the Sulphate of Ammonia Association will offer for sale to farmers from now till the end of September sulphate of ammonia (24½ per cent. ammonia) at 15*s.* per cwt. net cash, on condition that the quantities purchased at this reduced rate are removed from sellers' works by September 30. Quantities exceeding 15 tons to be taken in equal monthly deliveries during August and September. After that date, the price for home sales of sulphate of ammonia during the 1916-17 season will be 15*s.* 6*d.* per cwt. net cash. The goods will be delivered free on rail at makers' works in makers' bags, 3*d.* per cwt. being allowed if buyers supply their own bags.

Enemy Patents and Trade-mark.—Application is being made by Thomas Kerfoot and Ernest Hodgson Kerfoot for the avoidance or suspension of the trade-mark 276,477 ("Novocaine") belonging to the Farbwerke vormals Meister, Lucius & Brüning. The hearing takes place on August 24. W. J. Bush & Co., Ltd., are applying for the avoidance and suspension of the following enemy patents: 8069/09, "Phenol-esters" (Raschig); 3053/14, "Phenol-esters" (Dr. Schmitz & Co.). W. B. Ballantine is applying for the use of the Goldschmidt patents 788/06 and 926/06 for "alumino-thermic process."—The Gas Developments, Ltd., Walsall, applied on August 16 for the use of patents 17951/09, 19249/10, and 5833/11, belonging to the Badische Anilin- und Soda-Fabrik. These are for the manufacture of synthetic ammonia. Applicants stated that they are convinced that these can be worked successfully in this country, and that it is in the national interests that this should be done. The Comptroller said he saw no reason why the use of the patents should not be granted. The Board of Trade are to give a decision in the matter.

Fairchild Scholarship and Prizes.

The examination for the Fairchild scholarship and prizes was held on June 28 at the following four centres: Cardiff (Mr. Albert Hagon, Supervisor), Edinburgh (Mr. Peter Boa, Supervisor), Manchester (Mr. W. A. Kirkby, Supervisor), London (Mr. A. E. Holden, Supervisor). The Secretary of the Trustees (Mr. Holden) informs us that twenty-five candidates complied with all conditions of entry, but, owing to the war, only twenty-one sat—four women and seventeen men. Of the candidates who sat, sixteen represented England, two Ireland, one Scotland, and two Wales. The papers written by the candidates were assessed by Mr. Peter Boa (practical pharmacy and prescription-reading), Mr. A. J. Phillips (materia medica), Mr. Wm. Kirkby, M.Sc. (chemistry), and Mr. James Grier, M.Sc. (business knowledge). Following are the results:

Mr. William Stuttard, Runcorn, Cheshire, wins the scholarship with 381 marks out of a possible 500.

Mr. J. C. Davies, Bath, Somersetshire, the runner-up, wins the Wales prize of 5*l.* with 357 marks.

Mr. A. V. Day, Bath, Somersetshire, wins the England prize of 5*l.*

Miss Agnes M. Gardner, Glasgow, N.B., wins the Scotland prize of 5*l.*

Mr. H. Isaacson, Dublin, wins the Ireland prize of 5*l.*

In the individual subjects the candidates representing England, Ireland, and Wales made the following percentages:

	Mat. Med.	Chem.	Prac. Phar.	Bus. Know.	Total Averages.
England ...	39.4	51.	67.	52.3	52.4
Ireland ...	35.	41.	68.	34.5	44.6
Wales ...	47.	56.6	72.	60.	58.9

As Scotland had but one candidate, the percentages for Scotland are not given.

Mr. William Stuttard, Runcorn, Cheshire, was registered at Runcorn, and apprenticed to Dawsons, Ltd., 2 Market Place, Colne. Mr. Stuttard then entered the employ of Mr. J. H. Weston, Runcorn, by whom he is still employed.

Mr. John Clifford Davies, registered at Tredegar, Wales, was apprenticed to Mr. G. W. Armstrong, Pontllanfraith, Mon. Mr. Davies then entered the employ of Mr. H. T. Evans, Blackwood, Mon., and later went with Dr. J. J. Horgan, Abercwmboi, Glam.; he is now in the employ of Dr. G. D. Watkins, Oakdale, Mon.

Mr. Albert Victor Day was registered at Weston-super-Mare, and apprenticed to Mr. T. T. Addis, Wimborne. Mr. Day then went with Lewis Wing, Ltd., Weston-super-Mare, and is now in the employ of Mr. A. W. Griffin, Bath.

Miss Agnes M. Gardner was registered at Glasgow, and apprenticed to Mr. Matthew Carmichael, 1103 Pollokshaws Road, Glasgow, by whom she is still employed.

Mr. Henry Isaacson, registered at Dublin, was apprenticed to Mr. F. D. Smyth, 436 Great Brunswick Street, Dublin. Mr. Isaacson then entered the employ of Mr. W. Starkey, Rathmines, co. Dublin, and is still in his employ.

English and Welsh News.

Subscribers are invited to send to the Editor newspapers containing matters of trade interest. The items should be indicated.

London Pharmacists' Bowling Tournament.

On August 10 the Northern Pharmacists were "at home" to the Western District at Wood Green, and a good game resulted in a creditable win for the Northern team by 22 points, the scores being 52 and 30 respectively. The weather was superb and the green very fast. A very pleasant afternoon was concluded by the teams taking tea together at Williamson's restaurant.

Birmingham.

The Walsall Child Welfare Association has given 20*l.* to provide necessaries for infants, in the form of infants' foods, on the recommendation of the M.O.H. or official health visitor.

A meeting is called for Monday, August 21, at 3 o'clock, of the Council of the local Pharmacists' Association to consider important questions of the craft at the moment. [The official notice given is rather a long one, and perhaps this note may act as a reminder in the meantime and swell the attendance.]

The restrictions on petrol are altering the appearance of our streets very perceptibly, the horse and van coming into their own again. Much delay locally is being experienced in the delivery of goods from the wholesaler and retailer, and the local "Suttons" are being utilised as much as possible. The commercial travellers, who have protested, have been advised by the authorities to do as they did before motor-cars were in use, and try to realise that the country is at war.

Liverpool.

The Wallasey Town Hall, which has cost 100,000*l.*, is being fitted up on completion as a military hospital. A public inspection was allowed this week, tickets being sold for the benefit of the Red Cross Fund.

The preparation of the winter programme of the Liverpool C.A. is being advanced, the President (Mr. Wm. P. Evans) and the Secretary (Mr. D. H. Evans, of Lodge Lane) having been in consultation again this week.

With the end of the drought and a succession of thundershowers has come a falling-off in the demand for "heat" palliatives and the means of destroying fly-pests. Mersey cruises for wounded soldiers can be the better enjoyed.

In a case where a Liverpool licensee was summoned for selling during prohibited hours, the local Stipendiary decided that ginger-wine was "spirits," and imposed a fine of 40*s.* The city analyst said the wine contained 10½ per cent. of absolute alcohol, equivalent to 23 per cent. of proof spirit.

A military officer who said he was a member of Parliament was surprised this week when, obedient to the law, a pharmacist declined to sell him a small bottle of chlorodyne as a corrective for diarrhœa. "You must bring a prescription from a registered medical practitioner," was the reply. The officer went away displeased, but he returned later with a prescription.

The members of the Liverpool Pharmacists' Training Corps were actively engaged on August 7 at the Wellington Road Hospital receiving and attending to wounded soldiers from the Front. It is expected that their services will be in demand frequently during the coming month. The Corps by its participation in work of this description has amply justified its existence. The training the members have received in first-aid and ambulance work is now proving of service.

Manchester.

Mr. T. Miller, Hon. Secretary of the Manchester Pharmaceutical Association, who recently underwent a surgical operation, is slowly recovering, but it will be some time before he is able to resume his duties.

Manchester chemists recently had an opportunity of learning something in the art of window-dressing from a display of thousands of tablets of soap in a large emporium in Market Street. The large window was festooned with strings of tablets of soap of various shades of colour, and proved a great attraction. In the centre of the window was a model of a lady in the latest fashion, washing a boy, reminiscent of Pears' dirty boy, and showcards advising customers to buy their supplies of toilet-soap now at pre-war prices. There was also shown a pair of scales with a pound weight of soap—six tablets of various odd sizes, price 1*s.* per lb.

Sheffield.

J. T. Dobb & Son, through shortage of assistance, are relinquishing the retail portion of their business, but will retain the wholesale and the sale of their specialities at their West Bar address.

Mr. Robert S. Ridgley, who was awarded the Herbarium Certificate of Honour at the last Pharmaceutical Council meeting, is attached to the R.A.M.C. as a private in the dispensary at the Wharncliffe War Hospital, Sheffield.

Mr. L. S. M. Dawson, of City Road, Intake, Sheffield, is a firm believer in window-dressing. Just now he has a very attractive display of "Silkum" corn-cure, using white showcards with red letters, the window being lined throughout with black velveteen.

The many Sheffield friends will heartily congratulate Private Ernest Northend, who is attached to 1/3 West Riding Field Ambulance, on his being awarded the Military Medal for rescuing the wounded under fire. Prior to the war Mr. Northend was with Newsholme, Ltd., and is a native of Sheffield.

The goodwill of the business of C. A. George & Son was offered for sale, but failed to find a purchaser. The removal of this business takes away another old landmark. It was established by John Webster in 1812, and has produced many chemists of note, including W. V. Radley, one of the founders of the Pharmaceutical Society, who served his apprenticeship with Mr. Webster. Mr. Salisbury, a very old Sheffield worthy, commenced his pharmaceutical training here.

The Inland Revenue, through the local Surveyors of Income-tax, have just issued Form Q 1, which requires members of co-operative societies to declare their "income from dividends and interest you receive, including share-interest or deposit-interest from co-operative societies." In reply to a protest by the co-operative societies the Inland Revenue state that "dividends on purchases made by members of the societies are not income assessable to income-tax, and it is not intended that they should be included in the statement of income."

Miscellaneous.

Attempted Export of Opium.—At Middlesbrough on August 14, two Chinese firemen were sentenced to sixteen weeks' imprisonment each for attempting to export 6 lb. of opium, which was worth 27*s.* per lb. The opium was concealed among the coals.

Botanic Gardens.—At the annual meeting of the Royal Botanic Society on August 10 it was stated that, as a result of the dearth of vegetable drugs and the agitation in favour of growing them in this country, the Society's collection of medicinal herbs has been much in request.

Celluloid by Parcel-post.—The Postmaster-General gives notice that parcels containing articles composed wholly or partly of celluloid must in future be well packed in strong wooden boxes. Parcels not packed in accordance with this regulation will be refused.

Pharmacists' Volunteer Training Corps.—The company orders for next week are that on Sunday, August 20, the members will meet at Victoria at 10 A.M. and march to the Duke of York's Headquarters, Chelsea, for drill, etc. There will be no mid-week classes.

Cocaine Traffic.—William Charles Johnson, packer, an old offender, received six months' imprisonment with hard labour at Marlborough Street Police Court, on August 15, for trafficking in cocaine. Two women were also sentenced to three months' imprisonment each, and one to six weeks'.

Grimsby Pharmacists' Association.—A meeting was held on August 7, Mr. H. W. Colley (President) in the chair. The matters considered were the price-regulation scheme, the Cocaine and Opium Regulation, the sale of wine, and the need for qualified pharmacists as dispensers in public institutions.

Analytical Reports.—Public analysts' reports have been received dealing with the City of London, Hampshire, and the East Riding of Yorks. In the latter county 111 samples were examined, and all were found to be genuine with the exception of a sample of magnesia and one of sweet nitre.

Theft.—At the Mansion House Police Court on August 10, Sidney Sales (22), motor-driver, was sentenced to three months' imprisonment, and Francis McDavid (20) to six weeks' imprisonment, for the theft of a parcel containing 1 doz. bottles of Sanacine, valued 27*s.*, the property of Ashton & Parsons, Ltd.

Excess of Light.—Mr. Archibald Barbour, pharmacist, Market Square, Kirkby Lonsdale, was fined 15*s.* at Lancaster Castle on August 12 for riding a bicycle with an unshaded acetylene-lamp.—At Taunton, on August 2, Anthony Hughes was fined 10*s.* for failing to obscure or shade the lights in the pharmacy of Gregory & Wren in Station Road.

At East Ham Police Court on August 11, Thomas Downing (27), described as a chemist, 129 Green Street,

Forest Gate, was charged with being an absentee under the Military Service Act. He pleaded that he was a conscientious objector, and he thought that was sufficient. He did not consider himself a soldier, so that he could not be an absentee. He opened his business in August 1914, and was single-handed. The Bench fined him 40*s.* and handed him over to the military.

Poisonings.—Two of the cases of poisoning which have been reported this week were misadventures. In one case a Guy's Hospital patient died after the use of salvarsan, and in the other case a baby at Richmond was poisoned through the dispensing of sodium nitrate in a prescription in place of sodium citrate. The prescription, which ordered doses of 3½ grains of sodium citrate, was stated to have been badly written. A case of suicide with carbolic acid has been reported from Sunderland.

Sodium Benzoate as a Preservative.—The following notice has been sent out by the Board of Agriculture: "Communications have reached the Board of Agriculture and Fisheries referring to a statement which has appeared in the public Press to the effect that benzoate of soda may be used to replace sugar in the preparation of jam. The Board are advised that benzoate of soda is quite unsuitable for the purpose in question, and desire to warn the public against its use in jam-making. Serious results might follow an attempt to substitute this material for sugar."

Institute of Chemistry.—Part III. of the "Proceedings of the Institute of Chemistry," which has just been published, contains a reference to the suggested establishment of Overseas Branches of the Institute. The Finance Committee, reporting on the Buildings Fund, suggest that an endeavour should be made to raise a sum of 3,000*l.* to 5,000*l.* in order to meet the immediate deficiency and to provide for more complete equipment and furnishing. The Glass Research Committee gave a list of the firms employing the formulæ for glass-making devised by Professor Jackson and Dr. Merton. Many new formulæ have been prepared since October 1915, when the first series was published, and these are also being used by glass-makers. An investigation is now taking place regarding optical glass. Reference is made to the question of a standardisation-mark for glass and porcelain laboratory-ware, for which application has been made to the Registrar of Designs and Trade-marks by an association of dealers in laboratory-apparatus. The result of the inquiry has not yet been announced. A research has been conducted for the Government into questions connected with the composition of clays suitable for glass-pots. The papers set at the July examinations are also given.

Irish News.

Subscribers are invited to send to the Editor newspapers containing matters of trade interest. The items should be indicated.

Brevities.

Mr. Francis Charles Guest, Ph.C., Lismore, and his wife were charged at the Lismore Petty Sessions with having assaulted a man named John J. Lord. The Magistrates dismissed the charges.

The proposal to put the hands of the clocks back only thirty-five minutes in Ireland, so that English and Irish time will be the same after October 1, is heartily approved of by those engaged in pharmacy (*C. & D.*, August 12, p. 36). There is some opposition by the rural population, but the Dublin and Belfast Harbour Boards, as representing the commercial world, would welcome the change.

Mr. Hugh G. Corr, the young chemist whose research has been given considerable publicity, was formerly in the drug-trade in Belfast. He served four years with Mr. John B. Hay, Ph.C., 136-138 Lisburn Road, Belfast, before going to London. He took a course of chemistry lectures at Queen's University while with Mr. Hay. His services are now being utilised by the Government, but the discoveries attributed to him in the Press have been greatly exaggerated (see *C. & D.*, August 12, p. 36).

At the annual general meeting of the Royal National Hospital for Consumption for Ireland Professor E. J. W. McWeeney said the problem of finding a chemical substance which would exercise a destructive effect upon the tubercle bacillus while sparing the tissues in which it is embedded is the subject of a research being carried on with the aid of the funds accumulated under the National Insurance scheme. In his (Professor McWeeney's) laboratory investigations with this object in view are being conducted, and there is reason to hope that a drug may yet be found which will considerably delay the progress of the disease and offer a sufficient margin of safety.

Scottish News.

Subscribers are invited to send to the Editor newspapers containing matters of trade interest. The items should be indicated.

Brevities.

Mr. T. McKinnon, chemist and druggist, Govan, who recently underwent a minor operation in a Glasgow Nursing Home, has recovered, and is back at business.

The recent continued spell of bright sunshine has unexpectedly produced a profusion of red poppies. Some fields are literally "scarlet." Steps have been taken to collect the petals in view of the threatened scarcity.

Fifeshire and Forfarshire chemists are enjoying a spell of brisk holiday business. There are crowds of holiday-makers at coast and in country. Sunburn-remedies have been in great demand, and a brisk sale has been experienced for all classes of summer goods. The sunshine of the past few weeks has created a demand often greater than the supply for bathing caps, wings, waders, etc.

Dundee.

This town is said to have been a large buyer of bromide at recent high rates. A fear of still higher prices was the impelling influence.

The chemists were looking forward to a whole Wednesday holiday during the trades' holidays, as usual, but the arrangement has miscarried this summer.

The police have now served notices on chemists as to sales of cocaine and opium, but there seems to be a need of "hints" for retail and dispensing chemists. May chemists, for instance, repeat old prescriptions for eye-drops containing cocaine and boric acid, as they have been accustomed to do on the customer's request? [Not if the prescription contains one in a thousand or over of cocaine.—Ed. *C. & D.*] May pastilles of menthol and cocaine only be sold on prescription? Many persons buy these in shilling tins without prescription. [If the pastilles contain one in a thousand or over of cocaine they may only be sold on a medical prescription.—Ed. *C. & D.*]

Edinburgh.

A correspondent in a local paper, referring to the supply of earragheen, or Iceland moss, states that it can be found on the rocks of the West Coast and such places as Arran.

The St. Cuthbert's Co-operative Association is arranging to issue sugar-cards, so that all the members may receive equal quantities of sugar each week, the purchases and the dates being indicated on the cards. Sugar is not being sold to persons who are not members.

Glasgow and the West.

Three Chinamen were, on August 15, at the Western Police Court, charged with having opium in their possession. The men were sent to Duke Street Prison pending inquiries. The cases were taken under the new Cocaine and Opium Regulation. In the Sheriff Court on the same day two men were charged with attempting to export opium. The cases are put down for trial on October 3.

The following are notes regarding the chemists' window-displays in Portobello, "The Garden City by the City": Mr. J. Finlay, 76 High Street, has a display of soaps and hair and tooth brushes. Mr. Jas. A. Tod, 152 High Street, shows tooth-pastes, "Diamond" corn-cure, and tooth-brushes. Mr. T. Miller, 168 High Street, exhibits Icilma cream, Apenta-water, and Sanogen in one window, while the other window is devoted to photographic goods. Mr. R. Fraser, Ph.C., 332 High Street, who has a dispensing-business, has only showcards in his windows.

Kirkcaldy Chemists' Windows.

Boots, Ltd., High Street, have a very pleasing display of toilet-articles, tooth and nail brushes, etc. The chief feature, however, is a glycerin-substitute, with appropriate posters urging the public to help on the war by "freeing" the glycerin stocks. Mr. Key, High Street, gives prominence to Christy's F.M. smokers' dentifrice and a display of his own skin-cream in pretty green bottles. Mr. John Peebles has an attractive toilet and surgical display, while his second window is solely devoted to antiseptics, disinfectants, and insecticides. Mr. Herd, High Street, also has a pleasing toilet-window, and the same may be said of Mr. Charles Stewart's exhibit, two handsome hanging carboys making this particularly natty. Mr. D. Storrar has one window of Wright's coal-tar soap, and the other is photographic. Mr. Forrester's shop at Gallatown has the window devoted to quinine and phos tonic. It is draped with black lustre, with a cardboard model of an anvil, two arms, and a hammer driving out sparks of energy, vitality, brain-power, etc. It is evident from the various windows that the Kirkcaldy chemists are fully alive to the value of window-dressing as an "aid to salesmanship."

French News.

(From the "C. & D." Paris Correspondent.)

Paris Society of Pharmacy.—M. Maurice François' views on tablets (see *C. & D.*, July 15, p. 37) formed the basis of a long discussion at last month's meeting of the Paris Society of Pharmacy. M. Voiry held that tablets with a well-defined formula could not be ignored. Professors Bourquelot and Grimbert, MM. Tiffeneau and H. Martin gave their opinions, and M. François also took part in the debate. The one view was that the packet or cachet, which enables the pharmacist to guarantee the purity of the product, is preferable to the tablet. Others held that tablets, if the doses are properly divided, are of incontestable utility. M. Vaudin would have liked to see every pharmacist make his own tablets; but M. Pepin reminded him that efforts made in this direction had been somewhat discouraging. The only other leading feature of the meeting was Professor Bourquelot's paper on the synthesis of a galactobiose (a hexobiosis resulting from the union of two molecules of galactose). Fischer and Armstrong's galactosido-galactose, so far as can be judged, does not appear to be identical with the new substance synthesised by MM. Bourquelot and Aubry.

A 'Prentice of the Past.

A Picturesque Description of the life of a pharmacist's apprentice in Paris 140 years ago was recently published in the "Bulletin" of the Society of the History of Pharmacy. The writer is Henri Albert Gosse, of Geneva, who was working in 1780 in the *officine* of Quinquet, the pharmacist of the rue Marché-aux-Poirées (well-known in connection with the invention of the Argand lamp).

"Yes, my dear father, I am in pharmacy. I am really going through the whole round. Sometimes with bare and muscular arms I scrape and clean basins and saucepans, or carry (several times daily, and up a very bad staircase) loads from the fifth storey to the cellar or from the cellar to the attic. Sometimes, in the laboratory, I prepare syrups, jellies, waxes, compound oils, and ointments. I put, with the greatest care possible, some in bottles and some in jars. Sometimes in the shop I weigh, dispense, etc., or work all day with a 15-lb. pestle; I filter liquids or grind powders, or, upstairs, I practise plucking plants to dry them properly, laying them out on trellises ranged round a nice little study. Sometimes, as recreation, I chat with my neighbours, Mothers Picot, La Guitte, or La Croix. I find pleasure in their energetic language, and hear them address passers-by as 'My children.' Or, in the right of my shop, I converse with amiable young ladies, Mlle. Jourdain, who has all the physical and mental charm of a Franc-Comtoise (I call her my countrywoman, for she was born ten leagues from Geneva), or Mlle. Melanie, more witty, for she is Parisian," etc.

Netherlands Notes.

(From the "C. & D." Correspondent.)

Chemicals for the Colonies.—The home supply of chemicals is a difficult problem owing to the enormous prices which Germany is charging for fine chemicals, but this is nothing to the difficulties which confront exporters of fine chemicals to the Dutch East Indies. Formerly the N.O.T. (Nederlandsche Overzee Trust Maatschappij) were allowed to decide which chemicals would be permitted to pass over the seas, but recently, owing to the tightening of the blockade by the Allies, the conditions have become more stringent. The N.O.T. under the old plan settled the matter for the exporters in a few days, but now the British Embassy has to decide the question, and the process takes much longer. Again, if any of the chemicals are being made in England the exporter is told that it is not necessary to allow the German chemicals to pass. The names of the English makers are supplied to the exporter, but the "Nieuwe Rotterdamsche Courant" complains that even then supplies cannot always be obtained, and when permission to export is given a delay of many months has taken place. Mr. H. F. Tillema, in the "Pharmaceutische Weekblad," also points out that the prices of English-made chemicals are very high compared with what would be paid in Germany. Mr. Tillema mentions several special cases in which difficulties have arisen. Magnesium sulphate, for instance, cannot be furnished to the Dutch East Indies, as England does not allow exportation of magnesium sulphate of German origin, and the British product does not conform to the standard of the Dutch Pharmacopœia.

South African News.

(From "C. & D." Correspondents.)

"The Chemist and Druggist" is supplied weekly to members of all the Chemists' Societies in South Africa.

Cape Province.

Personal.—Mr. H. R. Peck, chemist and druggist, Mill Street, Cape Town, is putting up for municipal honours. The elections take place at the end of September. He is opposing one of the retiring members, so it is doubtful if he will be successful.

A Council-meeting of the Pharmaceutical Society of Cape Province was held at S.A. Mutual Buildings, Darling Street, Cape Town, on July 20. There were present Mr. J. Sloan (President), Mr. J. Dell (Vice-President), Dr. Froembling, Messrs. Asher, Cleghorn, Sowden, Edmeades (Hon. Treasurer), Ferguson (Hon. Secretary), and Austin Thomas. Several matters pertaining to the coming lectures were disposed of. A lengthy discussion took place as to the advisability of publishing a "Cape Formulary," and in the end it was decided that a Sub-Committee, consisting of Messrs. Sowden, Petrie, Dell, and the President, go into the matter of cost, etc. Two resignations were handed in from Mr. J. A. Mathew and Mr. Jas. Moore. Mr. Mathew was unanimously elected an honorary member, as the Society did not wish to lose such an old and valued member.

South African Stramonium.—The Imperial Institute about a year ago received from South Africa a sample of the leaves of *Datura Stramonium* grown there, and has reported that the sample called "stinkblaar" weighed 3 lb., and consisted of leaves measuring from 2¾ by 1½ inch to 8½ by 7 inches, and mostly of a sage-green colour; several leaves, however, showed patches of brown or dark green, while a few small leaves were reddish-brown. The leaves were found to contain 0.49 per cent. of total alkaloid, equivalent to 0.54 per cent. from the dry material. The chief alkaloid constituent was hyoscyamine. The following figures show how the leaves compared with stramonium from other countries:

From	Yield of Total Alkaloid
India	0.41 to 0.45 per cent.
Europe	Up to 0.40 per cent.
Egypt	0.28 per cent.

The leaves were submitted to manufacturing druggists and merchants in London, who mentioned prices between 30*s.* and 67*s.* per cwt. as the value. It seems clear from these results that the South African stramonium-leaves will be readily saleable in the United Kingdom and in America, particularly if care is taken to dry the leaves more carefully so that they acquire a uniform bright green colour and are not much broken. [A *C. & D.* correspondent in South Africa who calls our attention to this matter adds: "Stramonium is a universal weed out here. If you turn a piece of virgin veld and harrow out the grass, you get a lovely crop of 'stinkblaar.' It is the bane of the farmer, as it smothers his barley and oat crops. The whole country in many parts must be covered with the seed left by the capsules being blown along by the wind, but it does not germinate till the ground is cultivated. A forester near King William's Town once told me that after the first rains succeeding a devastating forest fire, which left nothing but charred stumps on the mountain sides, a fine crop of 'stinkblaar' sprang up. So it must be indeed a very hardy annual."]

Transvaal.

Business Change.—Mr. J. Johnston, chemist and druggist, has acquired Cohn's Pharmacy, Vrededorp, Johannesburg.

Mr. Hamilton Burrowes (30), chemist, employed at the Imperial Pharmacy, Jeppes, has died in the Johannesburg General Hospital from injuries sustained by a fall in Castle Mansions, Eloff Street.

Wills.

Mr. John Alfred Lamble, 44 Portland Road, Stoke, Devonport, chemist and druggist, who died June 11, left estate valued at 2,163*l.* 19*s.* 9*d.* gross, with net personalty 1,996*l.* 13*s.*

Mr. Henry Thomas Willis, 65 Avenue Road, Regent's Park, London, N.W., for nineteen years a director of the Patent Borax Co., Ltd., Birmingham, who died on June 23, left estate valued at 2,661*l.* 13*s.* 1*d.* gross, with net personalty 792*l.* 9*s.* 9*d.*

Deeds of Arrangement.

Dean, John T., 169 Berridge Road, Nottingham, Pharmaceutical Chemist.—Trustee: W. J. West, King Street, Nottingham. Dated, August 3; filed, August 11. Liabilities unsecured, 374*l.*; estimated net assets, 200*l.* The following are among the creditors: Burgoyne, Burbidges & Co., Ltd. (12*l.*); Southall Bros. & Barclay, Ltd. (8*l.*); Wyleys, Ltd. (4*l.*); Standard Tablet Co., Ltd. (3*l.*); Hirst, Brooke & Hirst, Ltd. (3*l.*); E. H. Butler & Son (8*l.*); Ayrton, Saunders & Co., Ltd. (9*l.*); Evans Sons Lescher & Webb, Ltd. (17*l.*); Chemists' Sundries, Ltd. (4*l.*); J. H. Haywood, Ltd. (8*l.*); Newball & Mason (27*l.*).

Moyle, Simon Chellew, 7 The Arcade, Bournemouth West, Chemist and Druggist.—Trustee: P. S. Booth, 32 Kimberley House, Holborn Viaduct, London, E.C. Dated, August 3; filed, August 10. Liabilities unsecured, 312*l.*; estimated net assets, 100*l.* The following are among the creditors: J. Morgan Richards, Ltd. (5*l.*); Crown Perfumery Co. (7*l.*); Scott & Bowne, Ltd. (3*l.*); Reliance Rubber Co. (6*l.*); J. Goldhill & Sons (6*l.*); Idris & Co., Ltd. (125*l.*); A. H. Cox & Co., Ltd. (9*l.*); Bristol Distillery (5*l.*); Thomas Kerfoot & Co. (9*l.*); Surgical Hosiery Co. (5*l.*).

New Companies and Company News.

P.C. means Private Company and R.O. Registered Office.

South Wales Canister Co., Ltd. (P.C.).—Capital 15,000*l.* The first directors are S. R. Gold and R. E. Gold. R.O., South Dock, Swansea.

V. C. Glass Manufacturing Co., Ltd. (P.C.).—Capital 25,000*l.* Objects: To carry on the business of manufacturers of and dealers in bottles, jars, etc. The subscribers and first directors are A. W. H. Vivian and J. H. Clark. R.O., Bounds Green Road, New Southgate, N.

W. H. Birtwistle & Co., Ltd. (P.C.).—Capital 5,000*l.* Objects: To acquire the Carr Oil Works, Ramsbottom, and to take over the business of refining and pressing for sale oil and tallow carried on by W. H. Birtwistle and J. Porritt as "W. H. Birtwistle & Co." The first directors are W. H. Birtwistle and J. Porritt.

Hampshire Bottle-works, Ltd.—Capital 25,000*l.* Objects: To carry on the business of manufacturers of and/or sellers of bottles and other receptacles, and glass, china, or clay ware of all kinds, manufacturers of casks, cases, boxes, shives, corks, bottle-stoppers, chemicals and manures, dye and gas makers, metallurgists, etc. R.O., 21 Pearl Buildings, Portsmouth.

River Side Estates, Ltd. (P.C.).—Capital 10,000*l.* Objects: To carry on the business indicated by the title and that of chemical-manufacturers, chemists, druggists, dry-salters, oil and colour men, importers and manufacturers of and dealers in pharmaceutical, medicinal, chemical, industrial, and other preparations and articles, etc. R.O., 41 Castle Street, Liverpool.

British Chemical Plumbers' Supply, Ltd. (P.C.).—Capital 10,000*l.* Objects: To carry on the business of chemical engineers, manufacturers of valves, acid and water coolers, lead baths, lead coils, and all kinds of chemical-manufacturers' requisites, lead-burners, metal and alloy-metal casters, chemical and explosive works contractors, etc. Solicitors: Talbot, Stein & Evershed, Burton-on-Trent.

Challenge Oil Co., Ltd. (P.C.).—Capital 7,000*l.* Objects: To carry on the business of importers, exporters, refiners, mixers, and blenders of and dealers in mineral, animal, and vegetable oils, importers and manufacturers of and dealers in lubricants, illuminants, detergents, cleansers, polishers, soaps, preservatives, disinfectants, deodorisers, paints, varnishes, enamels, scents, and chemical-products, etc. Solicitors: J. & M. Solomon, 58 Finsbury Pavement, E.C.

Jackson Calvert, Ltd. (P.C.).—Capital 20,000*l.* Objects: To enter into an agreement with Jackson Calvert and H. Ellison, jun., and to carry on the business of consulting and manufacturing chemists, chemical engineers, manufacturers of and dealers in dyewares, chemical, industrial, and other articles, acids and compounds, etc. The Board of Trade has authorised the acquisition by this company of the undertaking carried on by Jackson Calvert and Henry Ellison, the younger, as manufacturing chemists, at Buttershaw, near Bradford, the books and documents of which undertaking are liable to inspection under Section 2 (2) of the Trading with the Enemy Act. R.O., The Chemical-works, Buttershaw, Bradford.

Association for the Protection of British Capital and Property in Enemy Countries, Ltd.—Registered as a company limited by guarantee, with an unlimited number of members, each liable for 100*l.* in the event of winding-up. Objects: To advise and assist members and others by all lawful means (*a*) in protecting and recovering the proceeds of the sale of any business, or of the sale of any shares or interests in any company incorporated or trading in enemy territory, or in protecting and recovering loans made to any company or individual in such territory; and (*b*) in protecting, recovering, realising, or obtaining compensation for the loss of or injury to property, rights, or interests of any kind whatever and wheresoever situate, domiciled, or enforceable, including stock of and shares in companies, capital in partnership concerns, bills of exchange, promissory notes, mortgages and securities, trade-marks and patent rights belonging to or vested in any member or members (either solely or jointly with others, and either absolutely or as trustees, mortgagees, incumbrancers, or otherwise), or in subsidiary companies of which the member or members is or are the majority shareholder, which has been seized, attached, requisitioned, appropriated, made use of, forfeited, destroyed, lost, or injured by or at the instigation or with the connivance or neglect of any enemy country or State, or by any public body or authority, military or otherwise, situate in or acting or purporting to act by the authority or in the name of any such country or State, or by any firm, company, or person domiciled, established, trading, or residing in any enemy country or in a country invaded or occupied by the military forces of an enemy country, or being a citizen or citizens thereof; to organise joint action by all or any members for the purposes aforesaid, to collect information and draw up and present petitions and particulars of claims and furnish information to British, Indian, Colonial, friendly, or neutral Governments, etc. The management is vested in a Council, the first members of which are Sir Arthur P. du Cros, Bart., M.P., the Right Hon. Thos. R. Ferens, M.P. (director of Reckitt & Sons, Ltd.), Joseph Hood (director of British American Tobacco Co., Ltd.), Sir Charles J. Jessel (Chairman of Imperial Continental Gas Association), W. Hulme Lever and John McDowell (directors of Lever Bros., Ltd.), and Sir William E. B. Priestley, M.P.

Baiss Brothers & Stevenson, Ltd., have declared a dividend of 10 per cent. on the preference and 20 per cent. on the ordinary shares.

Tinctura Digitalis.

By Abel Scholar.

Do we make this tincture in the best way possible? I do not think we do. There is an infusion of digitalis which we are told is far and away the best preparation for the use of the sufferers who require this drug. The tincture as made according to the B.P. 1898 employed 125 grams of dried powdered leaves per litre of product, the solvent being 60-per-cent. alcohol, the total solids amounting to 3.5-per-cent. w/v, and the specific gravity of the tincture was 0.928. The B.P. 1914 prescribes 100 grams of dried powdered leaves per litre of product, the solvent being 70-per-cent. alcohol. The total solids amount to 2.5-per-cent. w/v ("Squire"), and the specific gravity 0.896 ("Squire"). A carefully made sample prepared by the writer gave 2.65-per-cent. total solids. The sp. gr. was 0.908, while another sample had a sp. gr. of 0.904, with total solids 2.50-per-cent. w/v. The sp. gr. of 70-per-cent. alcohol is 0.889 (B.P.). These figures suggest the desirability of determining the amount of moisture present in powdered leaves and making allowance for its presence when weighing the ingredients in such preparations.

The suggestion is now made that the leaf should be exhausted with cold distilled water first, filtering and adding the requisite quantity of 90-per-cent. alcohol to bring the final alcoholic strength to from 69 to 70 per cent. That water dissolves most of the soluble constituents of those removed by official alcohol is shown by the following experiment: 100 c.c. of tincture was evaporated to dryness and gave 2.75 grams of residue. This was treated with 500 c.c. of cold water and 250 c.c. evaporated to dryness, when 1.3 gram remained, showing that 2.75 — 2.6 = 0.15 gram of substance had not dissolved. Perhaps it will be contended that this precious 0.15 gram was digitoxin or some active constituent of digitalis yet unidentified, but to allay such suspicions on these grounds an experiment *in vili corpore humano* did not cause any deviation from serenity and bodily comfort. Perhaps it ought to have been given to the physiologist's frog instead, and the effect then noted on the revolving drum.

Veterinary Notes.

By a M.R.C.V.S.

Cage-birds' Insecticide.

A Good Preventive for cage-birds against mites and parasites, which often infest them, is to place a small bag of sulphur in the cage.

Post-parturient Sickness.

Very Often after calving, especially in cows after their first calf, the animals suffer from a form of sickness due to retention of the second cleansing. They exhibit a certain amount of sickness and lassitude, do not eat heartily and ruminate sparingly, and have a dull and depressed look, indicating that they are out of sorts. Give nutritious food in small quantities, such as linseed gruel, carrots, and potatoes, and the following draught daily:

Mag. sulph.	...	...	...	3iij.
Sod. chlor.	...	...	...	3ij.
Pulv. nuc. vom.	...	...	...	3ij.
Zingberis,				
Ferri sulph.	...	...	aa.	3iv.
Pulv. quassiæ	...	...	...	3iv.

Misce.

Vomiting in the Dog.

The Dog, of all animals, is the one in which vomiting is the most frequent; in fact, it is asserted that some dogs can vomit at will, and everyone knows that the dog eats couch-grass (*Triticum repens*) to procure emesis. Vomiting must not, however, be thought of too lightly, as it is associated with numerous serious diseases, such as distemper, gastritis, Stuttgart disease, canine influenza, impaction and irritation of stomach and intestines, enteritis, etc. In frequent and severe attacks of vomiting treatment is necessary, and should in the first place be directed to remove the cause and to lessen the irritability of the vomiting-centre. The chief drugs used in lessening the irritability of the vomiting-centre are chloral hydrate, hydrocyanic acid, belladonna, strychnine, ipecacuanha, opium, pot. bromide, calomel, etc. A very good and favourable remedy is bismuth and hydrocyanic acid. Creosote in stomach-diseases has gained great praise, and is well worth a trial.

Dropsy in Sheep.

This complaint, also called sanguineous ascites, is very prevalent among sheep fed on bad and decomposed food, such as rotten turnips, and is also influenced by long exposure to cold and wet. The symptoms exhibited by the sheep are weakness and stiffness, with disinclination to move, heavy breathing or panting, eyes pale and watery, watery swellings between the lower jaws and belly, constipation succeeded by diarrhœa, urine pale in colour and excessive in quantity. The treatment consists in removing the animal to warm and dry quarters, feeding it on nourishing diet, and administering tonics daily. A suitable tonic is the following:

Ferri sulph.	...	...	...	3j.
Pulv. gentianæ,				
Pulv. zingiberis	...	...	aa.	3j.
Pulv. nucis vom.	...	...	...	3ss.
Sodii chlorid.	...	...	...	3vj.
Pulv. anisi	...	...	...	3j.

M. Ft. pulv.

Great care must be afterwards observed in the choice of pasture. A relapse generally terminates fatally.

Joint-ill in Lambs.

As this disease is more prevalent in some years than in others, and on some farms more than others, it was at one time regarded as proving a connection with the soil and weather, but it is now known to be an infectious disease originating from germs conveyed to the newly severed navel cord. The symptoms are practically the same as those seen in joint-ill in foals—stiffness and lameness, swelling of the joints, first one, then the other, and formations of abscesses which may burst. Treatment is of little avail, as it is very seldom a cure is obtained. Prevention is the first and most important consideration. Observe rigid cleanliness, particularly in the lambing shed or pens and in all instruments used in the lambing operation. The hands and clothes of the shepherd or veterinary surgeon should be disinfected after each operation. When there is an outbreak of joint-ill disinfect all the pens and sheds and remove the healthy stock to fresh pastures. Ligature the navel cords of all newly born lambs with iodised tape or twine, and where practicable paint tinct. iodi on the part surrounding the navel daily for three days.

Medical Gleanings.

Jaundice.

Dr. W. H. Willcox, in the "British Medical Journal" (I., 1916, 297), deals with the epidemic jaundice of campaigns and with toxic jaundice due to tetrachlorethane-poisoning. Jaundice is of common occurrence among troops on campaign, and the infection is almost entirely gastro-intestinal in the way it spreads. The causal agent is not known with certainty. The treatment which has been found advantageous, although convalescence is somewhat slow, is as follows: Rest in bed in the early part of the disease should be insisted upon. Careful dieting, which will be mainly liquid, is important. It must be remembered that on campaign the milk will, owing to its sterilisation, be devoid of anti-scorbutic and anti-beri-beri vitamines, so that some articles of diet should be given to counteract that deficiency. Thus fresh lemon-juice in lemon drink is important. Porridge, pea-flour in soups, mashed potato, yeast in some form—for example, dried yeast added to hot milk, or yeast cakes made into a paste with milk—are important additions to the dietary. Soups to which fresh vegetables are added are valuable. Owing to the anorexia present, the diet must necessarily be quite light. Excess of protein should be avoided, and meat is best not given until the jaundice is clearing up. As regards medicines the following mixture may be given with advantage:

Sod. bicarb.	...	...	...	gr. xx.
Potass. citratis	...	...	...	gr. xxx.
Sod. sulph.	...	...	...	gr. xxx.
Syrup. aurantii	...	...	...	3j.
Aquam ad	...	...	...	3j.

T.d.s.

Urotropin gr. x. t.d.s. in water, as a gastro-intestinal antiseptic, seemed to do good in many cases. Calomel should not be given in repeated doses, since it appeared that patients suffering from epidemic jaundice were very susceptible to the effect of calomel thus given. In some cases mercurial stomatitis occurred. There is, however, no objection to giving a single dose of calomel in the early stages. As regards toxic jaundice caused by tetrachlorethane-poisoning, three stages of the disease are recognised, and the treatment adopted varies accordingly.

Homatropine Solution.

Mr. N. Bishop Harman, F.R.C.S., suggests ("British Medical Journal") that economies can be effected in the use of the costly alkaloids employed in ophthalmic work if they are dissolved in a preservative solvent. The following is the "ophthalmic solvent" which he recommends:

Methyl salicylate	...	...	...	2 gr.
Oil of gaultheria	...	...	...	2m
Tincture of iodine	...	...	...	2m
Distilled water	...	...	...	1 pint

The mixture is well shaken, poured into a stoppered bottle, and left for forty-eight hours, when it is ready for use. This is used as a solvent for the homatropine and cocaine required in ophthalmic practice. Cocaine dissolved in this liquid was found, after three months, to be free from moulds. Mr. Harman also mentions that he finds a solution of homatropine hydrobromid thickened with gum acacia equal in efficiency to a solution of homatropine in castor oil.

Business Changes.

Authenticated notes are inserted without charge if not in the nature of advertisement, and subject to Editorial approval.

The Timothy White Co., Ltd., have opened a branch at 23 Market Place, Penzance.

The Works of Meister, Lucius & Brüning, Ltd., at Ellesmere Port have been purchased by Levinstein, Ltd., Blackley, Manchester.

Mr. V. A. Picerno, drug and chemical merchant, has removed from 116 St. John's Hill to 92 Falcon Road, Battersea, London, S.W.

A New Pharmacy is to be opened at 209 Vauxhall Bridge Road, London, S.W., near Victoria Station, under the style of Herbert's Cash Drug-stores.

Mr. C. J. Holt has commenced business as an essential-oil merchant and agent at 26-27 Fenchurch Street, London, E.C. Mr. Holt was formerly a partner in the firm of Charles Westphal, now in liquidation, and the agency of the Citrus Oil Co., of Acireale (Sicily), has been transferred to him.

Trade Notes.

Eucalyptus Oil.—Quotations by cable can be had from Burnside & Co., Eagleshawk, Victoria, Australia.

Mrs. Morison, Ltd., 47 South Molton Street, London, W., specialise in anatomical corsets and surgical belts.

Artificial Eyes.—Raphael's, Ltd., optical works, Hatton Garden, London, E.C., have a large stock of artificial eyes, both shell and sncllens.

"Tetra" Crepe Bandages are supplied to the wholesale trade by Clement & Johnson, 19 Sicilian Avenue, London, W.C. Particulars are given in an advertisement in this issue.

Stedman's Powders.—An advertisement in the last issue gives the present prices of Dr. Stedman's teething-powders. An increase in the number of powders in the packets has been in vogue now for six months, and it is intended to advertise the fact to the public after October 1.

The English and Russian Trading Co., British Columbia House, Waterloo Place, London, S.W., have established a sale-room of goods suitable for the Russian market and also of Russian products, and are publishing a trade-directory of Russian and British firms.

Women in Pharmacy.—A new syllabus of the course of instruction given to lady dispensers has just been issued by Elt's College of Pharmacy, Ballard's Lane, North Finchley, London, N. The College also prepares students for the examinations of the Pharmaceutieal Society.

"Income-tax Guide."—The "Financial Times," 72 Coleman Street, London, E.C., has issued a revised edition of the pamphlet regarding income and excess-profits taxes. The "Guide" includes the alterations recently introduced by the Finance Act, 1916, and is a good practical exposition of this complicated matter.

Southall's Materia Medica.—The advertisement in this issue of Southall Bros. & Barclay, Ltd., Birmingham, is appropriately devoted to Southall's "Materia Medica," which is much used by students of pharmacy and medicine. Southall Bros. & Barclay, Ltd., also supply students' requisites, a list of which is given.

Opium and Cocaine Register.—James Townsend & Sons, label-printers, Exeter, and 2 and 3 Stonecutter Street, London, E.C., have produced for chemists' use a "Register of the Sale of Opium and Cocaine," in accordance with the Regulation made by the Home Secretary (*C. & D.*, August 5, p. 43). The register is an oblong book, 8 by 5, of about 120 ruled pages, and is sold at 1*s.* 9*d.* post free.

Salicylates.—The London Chemical Works, Ltd., Rubastie Road, Southall, are largely extending their works for the production of salicylic acid and salicylates. The company are pioneer makers of these products in this country, and are engaging in the manufacture on a very large scale. The quality of the acid is very fine, judging from a sample we have received this week.

Wright's Coal-tar Soap.—Wright, Layman & Umney, Ltd., Southwark, London, S.E., inform the trade that owing to the heavy demand for Wright's coal-tar soap for the British Expeditionary Force, the Red Cross and other hospitals, the Y.M.C.A., etc., they are compelled to abandon for the present the bonus for window-displays. The arrangements for window-displays, however, will be resumed at an early date.

Pears' Solid Brilliantine.—A. & F. Pears, Ltd., 71-75 New Oxford Street, London, W.C., have just added a solid brilliantine to their "Golden" series of toilet-preparations. It is put up in a well-finished gold-enamelled box, the oblong shape making it easy to dip into it the end of the brush. The solid brilliantine is tinted green, and is beautifully perfumed. The "Golden" series is now being well advertised to the public.

Ayrton's Lemonade Tablets.—Ayrton, Saunders & Co., Ltd., wholesale druggists, Liverpool, reproduce in their advertisement one of the announcements which they are making in the daily papers regarding Ayrton's lemonade tablets. The tablets are especially for the use of "our soldier boys," and are one of the most appreciated presents which soldiers can receive in the present spell of hot weather. Showcards are supplied.

Neocaine-Surrenine.—The Anglo-French Drug Co., Ltd., Gamage Buildings, Holborn, London, E.C., call attention to neocaine-surrenine, which is a perfect substitute for cocaine in minor operations, such as tooth-extraction. It is also adapted for use in place of cocaine in ointments, insufflations, etc., where a local anæsthetic effect is sought. The toxicity of neocaine is stated to be six or seven times less than that of cocaine. It is supplied in capsules of the powder or ampoules and flasks of the ready-made solution.

Martindale Progress.—We have received from W. Martindale, 10 New Cavendish Street, London, W., a sample of a new moth-powder which involves a new principle in this class of preparations. The moth-powder, made from an Indian vegetable product, is stated to be effectual for preserving furs, woollen, silk, and linen materials from the ravages of moth. It is not unpleasant to the smell, and it is suggested as likely to be useful in other directions, such as a vermifuge in the trenches. An interesting evidence of progress is also afforded by the institution of a physiological control over the Martindale manufactures. This is in addition to the bacteriological and chemical tests which have been maintained. For example, every batch of chloralamide is examined chemically, and to this physiological examination has been added. The results are interesting as showing that chloralamide is less toxic than its parent, chloral hydrate, and that chloralamide is a perfectly safe hypnotic.

Trade-marks Applied for.

The figures in parentheses refer to the classes in which the marks are grouped, for a list of which, with particulars as to registration, see "The Chemist and Druggist Diary," 1916, p. 365.

(*From the "Trade-marks Journal," August 9, 1916.*)

"Aspiromer"; for atomisers, etc. (11). By The Devilbiss Manufacturing Co., 1,304 Dorr Street, Toledo. 373,714.

Monogram "T H & G"; for food-substances (42). By Thew, Hooker & Gilbey, Ltd., 2 Cheapside, E.C. 373,735.

"Transol"; for all goods (47). By T. Howse, Ltd., Union Street, Smethwick. 372,797.

"Regeshave"; for perfumery, etc. (48). By Regesan, Ltd., Trent Street, Nottingham. 373,707. (Associated.)

(*From the "Trade-marks Journal," August 16, 1916.*)

Device of Atlas; for photographic chemicals (1). By Claus & Co., Ltd., Crabtree Lane, Clayton, Manchester. 372,953.

"Eophan"; for a veterinary antiseptic (2). By Willows, Francis, Butler & Thompson, Ltd., 40 Aldersgate Street, E.C. 373,607.

"Vermitox"; for chemicals (2 and 3). By Heppell & Co., 164 Piccadilly, London, W. 373,824/5.

Device of trident with words "Hygienic Cotton Wool"; for medicated cotton wool (3). By Clark & Co., Ltd., Anchor Mills, Paisley. 372,350. (Associated.)

"Hemorox"; for medicinal preparations (3). By H. K. Skinner, junr., 102 Fore Street, Kingsbridge, Devon. 372,961.

"North British Dental Golden Fleece Rubber" with device of thistle, and scales and sword ("North British" disclaimed); for dental rubber made in Scotland. By the North British Rubber Co., Ltd., Fountainbridge, Edinburgh. 372,939. (Associated.)

"Radior"; for curative apparatus (11), and for toilet-preparations (48). By E. Miller, 167 Oxford Street, W. 373,660/1.

"Axixator"; for an instrument for eye and ear massage (11). By M. B. Bloom, 19 Golders Green Crescent, Golders Green, N.W. 373,679. (Associated.)

"Kudos"; for furniture and upholstery (41). By Boot's Pure Drug Co., Ltd., 37 Station Street, Nottingham. 373,867.

"Herculoid"; for a cream-of-tartar substitute (42). By Kernick & Son, Ltd., 47 Queen Street, Cardiff. 373,305. (Associated.)

"Eldorado" and "Tendresse"; for perfumery, etc. (48). By the Standard Tablet and Pill Co., Ltd., Hove. 373,238/242.

"Tartex"; for perfumery, etc. (48). By A. J. Nathan & Co., 24 New Bridge Street, E.C. 373,680.

"Nell Gwynne"; for perfumery, etc. (48). By Yardley & Co., Ltd., 105 Carpenter's Road, Stratford, E. 373,769.

Adulterating Cumin-seed.—It appears that a kind of grass-seed, known as seenk-seed, is extensively used for adulterating zira or cumin intended for export. The gross weight of the quantity of seenk-seed imported into Agra during the official year 1915-16 was 9,510 maunds.—*Indian Trade Journal.*

"The Times" reports that "drug-prices, which have ruled very high, are now rapidly declining to a reasonable level," a statement with which few in the drug-trade will agree. The tendency of a few drugs has certainly been towards easier rates, but they are still far from "reasonable."

Births.

Swales.—At Hurst Lea, West Park, Leeds, on August 11, the wife of Thomas Swales, of a daughter.

Turner.—At 101 Linnæus Street, Hull, on August 9, the wife of J. Scriven Turner, chemist and druggist, late of 20 Bury Street, London, W.C., of a son.

Wilkinson.—At West Kensington, on August 9, the wife of B. R. Wilkinson, Ph.C., of a son.

Deaths.

Elgar.—At Loop Street, Cape Town, on July 23, Mr. H. Magness Elgar, who formerly represented various drug and sundries houses in South Africa and India.

Eyles.—At St. Mary Bourne (Hants), on August 5, Mr. John Robert Eyles, chemist and druggist, aged fifty-one. He served his apprenticeship at Newbury with Hickman & Metcalf, and later went into business at Weymouth. He had served as a Guardian of the Poor.

Farraday.—At Tottington, near Bury, Lancs, suddenly, on August 9, Mr. John Farraday, chemist and druggist, aged seventy. Mr. Farraday carried on business for many years, and was succeeded on his retirement by his son, Mr. Augustus Farraday. For some years he acted as registrar of births and deaths at Tottington.

Mallinson.—At 92 Kirkdale, Upper Sydenham, London, S.E., on August 6, Mr. James Edward Mallinson, chemist and druggist, aged fifty.

Pellew.—At 374 Old Kent Road, London, S.E., on August 1, Mr. Albert Pellew, chemist and druggist, aged fifty-seven.

Smith.—At 38 Somers Road, Southsea, on August 2, Mr. William Smith, chemist and druggist (formerly of Ryde), aged sixty-five.

Died on Service.

Borthwick.—Private Edward Borthwick, who prior to enlisting in the King's Own Scottish Borderers, was employed by Mr. Thomas Welsh, chemist and druggist, Moffat, has been killed in action. He was eighteen years of age.

Farr.—Lance-Corporal Jack Farr, son of Mr. E. H. Farr, Ph.C., High Street, Uckfield (Sussex), has died of wounds received in action, and after suffering the amputation of his right leg below the knee. He was twenty-seven years of age, and was in the Signal Section of the Sportsmen's Battalion. Lance-Corporal Farr, who was educated at Christ's Hospital School, was articled to an Uckfield firm of solicitors. He afterwards passed the Solicitors' Final with honours. Two years later he gained the London University LL.B., also with honours. He was at one time captain of the reserve eleven of the Uckfield F.C. He joined the Army early in October 1914, and was sent to France in the autumn of 1915. He was buried in the cemetery of Abbeville on August 4.

Finlayson.—Killed in action, on July 26, Sergt. William Finlayson, Seaforth Highlanders (T.F.), aged twenty-six, brother of Mr. C. Finlayson, chemist and druggist, Crown Street, Glasgow.

Fletcher.—Lieutenant Robert H. Fletcher, Royal Fusiliers (late manager, disinfectant department, Edward Cook & Co., Ltd., Bow, London), who has been killed in action, joined the Colours in 1914 as a private in the Westminster Dragoons, and was subsequently given a commission in the 14th Royal Fusiliers. He was sent to Gallipoli, where he was twice wounded, the second time seriously, and he was then invalided home. He underwent several operations and took every possible means to make himself fit again. Finally, at his urgent request for active service, he was sent to France and attached to the 17th Battalion Royal Fusiliers. His last words to his colleagues when he bade them good-bye before leaving England were, "I am glad to go back; I am wearing the King's uniform and I want to do the King's work"—a spirit which permeates the ranks of Kitchener's Army.

Fraser.—Captain Finlay David Fraser, Canadian Infantry, who has been killed in action, was the elder son of the late Mr. R. Innes Fraser, Brantford, Canada, and nephew of Mr. J. Innes Fraser, Ph.C., 9 Dundas Street, Edinburgh. He was twenty-nine years of age.

Hopkinson.—In Egypt, on July 25, Sergeant Alfred James Hopkinson, chemist and druggist. Sergeant Hopkinson, who died from dysentery, was the son of the late Charles Hopkinson, pharmacist, Canterbury. He was senior dispenser in the British Red Cross Hospital, Egypt.

Robertshaw.—Private J. E. Robertshaw, Stanningley, of the West Yorks Regiment, has been killed in action. He was formerly employed by Boots Cash Chemists, Leeds.

Wilkins.—Private H. J. Wilkins, Royal Berks Regiment, who enlisted while at the Duke Street branch of Boots Cash Chemists, Ltd., at Reading, has been killed in action.

Personalities.

Authenticated notes are inserted without charge if not in the nature of advertisement, and subject to Editorial approval.

Sergeant John Dalby, Royal Engineers, has been awarded the Military Medal "for bravery in the field." Sergeant Dalby is a technical chemist, and was engaged with a Manchester firm when war broke out.

Alderman Edward Packard, J.P., of the firm of Edward Packard & Co., agricultural chemists and chemical-manufacturers, has been elected High Steward of the borough of Ipswich, in succession to the late Lord Kitchener.

Miss Kathleen M. Metcalfe, daughter of Mr. J. T. Metcalfe, pharmacist, Shirley, Birmingham, has passed the July Matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield.

Mr. W. Duckworth, of Ribby Hall, Kirkham, who has been placed on the Commission of the Peace for Lancashire county, was formerly in business in Blackburn as a chemist and druggist. He served his apprenticeship with Mr. Ainsworth, of King William Street, and left the town to start on his own account as a manufacturing chemist in Manchester—a concern which he still continues in Chester Road, Old Trafford.

J. R. Edwards, elder son of Mr. R. G. Edwards, Ph.C., Fallowfield, Manchester, who distinguished himself recently by gaining an open classical scholarship of the value of 80*l.* a year at University College, Oxford, has this week been awarded a Manchester City Council Scholarship of the value of 60*l.* a year, which he will hold with the one gained at Oxford. Mr. Edwards' younger son, Norman, was successful in passing the Northern Matriculation Board examination last month, with distinction in Latin.

Mr. John H. Nidd, chemist and druggist, 166 and 714 Rochdale Road, Harpurhey, Manchester, who has been appointed as representative of the Manchester pharmacists on the Insurance Committee, was apprenticed at Boston. He was afterwards an assistant at Ripon, Yorkshire, and Earl's Court Road, Kensington. He passed the Qualifying examination in 1891, and has been actively engaged in the retail business in Manchester ever since. Mr. Nidd has been a member of the Manchester Pharmaceutical Committee since its formation, and is now Vice-Chairman of the Committee. Mr. Nidd was one of the four chemists selected to give evidence before the Departmental Committee in London on Insurance matters in July 1915.



Photo] [*Clerworth.*
Mr. J. H. Nidd.

Captain H. N. Brinson, of the Liverpool "Pals," has been wounded in the left thigh. Captain Brinson is the eldest son of Mr. George Brinson, of 53 Greenbank Road, Oxton, Birkenhead, the well-known North Wales representative of Evans Sons Lescher & Webb, Ltd. Captain Brinson, who served his apprenticeship in a Liverpol cotton-broker's office and migrated to the United States, returned home on the declaration of war, joined the "Pals," and earned his commission. He is in hospital at Rouen. He has received the D.S.O. for gallant service.

Are You a Chemist? If you are, join the Pharmacists' Company of the Central London Volunteer Regiment. The Company has, I understand, discovered, among other things, the elixir of youth, and if that does not interest you either as a chemist or a man, nothing will. The Master Chemist is to be seen by would-be novitiates at 26 Pancras Road, N.W.—*War Budget.*

Insurance Act Dispensing.

A Record of matters concerning Chemists' interests in the National Health Insurance Acts.

Reports from Local Centres.

ENGLAND.

Lancashire.—The Insurance Committee met on August 14, Mr. J. Travis-Clegg in the chair. Mr. Peake drew the attention of the representatives of insured persons to the fact that the introduction of stock mixtures tends to hasty and imperfect prescribing. Chemists do not mind the change, but the effect is to make the patient fit the remedy, rather than the medicine suit the case. He had received strong protests against the system, and desired to put insured persons' representatives on their guard. The Chairman said the County Council's Public Health Committee was making temporary arrangements for the treatment of venereal diseases, pending a complete scheme which would embrace the laboratories in Manchester and Liverpool and the various hospitals in the county. Dr. Oldham advocated the setting-up of a county laboratory for the treatment of such diseases, and this suggestion is to be considered.

Manchester.—A Council-meeting of the Pharmaceutical Association was held at 65 Market Street on August 9, when the principal business was to consider the resignation of Mr. Harry Kemp from the Manchester Insurance Committee owing to continued ill-health. Great regret was expressed as to the cause of the resignation, and the following resolution was passed: "That the Council of the Manchester Pharmaceutical Association receives with the very greatest regret the notification of the resignation of Mr. Harry Kemp as its representative upon the Manchester Insurance Committee. The Council desires to place on record its deep sense of thankfulness for the services which Mr. Kemp has rendered in this important position since the inauguration of the National Health Insurance scheme. His continued and successful efforts in the delicate negotiations which have arisen from time to time have placed the pharmacists of Manchester under a deep debt of gratitude." It was agreed that a copy of the above should be forwarded to Mr. Kemp, together with the best wishes of the meeting for his speedy recovery from his present indisposition. Several members spoke of the splendid and fearless manner in which Mr. Kemp had carried out what he (Mr. Kemp) thought was his duty as the pharmacists' representative on the Insurance Committee. Mr. J. H. Nidd was unanimously elected to the position vacated by Mr. Kemp.

North of England.—At the meeting of the Joint Insurance (Prescriptions) Committee on July 26, the Superintendent's report was received, dealing with the work of the Bureau down to June 30. The total number of prescriptions for the first quarter was 507,918. The pricing has not yet been brought up to date, but a marked increase in the rate of progress is reported. Thirteen Pharmaceutical Committees have arranged for the checking of accounts and prescriptions on behalf of the chemists, and eleven satisfactory reports have been received; no report is forthcoming from the other two areas Particulars relating to the prescribing in areas where the Panel Committees have made arrangements with the Joint Committee, under Clause 5 of the agreement, are being prepared. It is proposed that interim reports be furnished in cases where, after consideration of the monthly statistical schedules, the Panel Committee require information on the prescriptions of a particular practitioner. In the accounts for May and June a great improvement in the methods employed by chemists in rendering their statements was noticeable. A memorandum on the subject has been issued to chemists and doctors, which, it is hoped, will effect a further improvement. The adoption of local Formularies in three more areas will further expedite the work of the office.

Portsmouth.—The Pharmaceutical Committee has been re-elected with a change of one member only, and is now constituted as follows: Messrs. T. Postlethwaite (*Chairman*), A. B. Sparrow (*Vice-Chairman*), T. O. Barlow, T. Brewis, G. W. Darling, G. A. Harbin, J. W. Rhodes, and W. R. Atterbury (*Secretary*). Chemists will shortly receive the balance in full payment of their 1915 accounts, and the doctors will have about 2*d.* of the "floating sixpence."

Sheffield.—The Pharmaceutical Committee met at the Insurance Office on August 14, when Mr. H. G. Williams was re-elected *Chairman*, Mr. A. H. Culverhouse *Vice-Chairman*, and Mr. H. Antcliffe *Secretary*. The Secretary reported that a conference had been arranged for September 13 of the Chairmen and Secretaries for the areas covered by the N.E. Midland Pricing Bureau, with the Vice-President of the Society and Mr. Mallinson. A letter from the Insurance Committee said that Committee knew nothing of a scheme for the early settlement of the 1915 accounts (see *C. & D.*, July 22, p. 47). In regard to increased establishment-charges, the Committee is of opinion that wages have risen by 50 per cent., materials by 100 per cent., and light and heat by 33⅓ per cent. It was decided to apply for a further grant of 70*l.* for administrative expenses. The non-attendance of Mr. W. Beaulah at the Committee-meetings, owing to illness, has been reported to the Commissioners, who will take no action in the matter. Mr. Chadwick called attention to additions being made on certain prescriptions to stock mixtures which carry a reduced dispensing-fee, and the Secretary is to ask the Central Checking Bureau to see that a full fee is allowed on such scripts, in addition to the cost of the added drug. The Insurance Committee's attention is to be drawn to the practice of some non-panel practitioners, when acting as *locum-tenentes* for panel doctors, of signing prescriptions with their own names only. The Pharmaceutical Society is to be asked to supply the Committee with the conditions of service for 1917, so that they may be adequately considered before the Committee recommend panel chemists to accept service for next year.

West Bromwich.—At a meeting of the Pharmaceutical Committee held on Tuesday, August 8, Mr. James Lock was re-elected *Chairman*, and Mr. Kemsey-Bourne *Secretary*. The Secretary was directed to prepare a report of the year's work for presentation at the next meeting of the local Association. The Chairman reported on a meeting he attended on July 26 in Birmingham to discuss the checking of prescription-pricing, and stated that the Pharmaceutical Society proposed to allow a rebate of one-third of the sum contracted for with their Bureau for checking if a sample check were carried out instead of the full and complete check anticipated at the outset. It was agreed to pay to the Society 8*l.*. 10*s.* on account for checking, and this sum has been deducted *pro rata* from chemists' accounts by the Insurance Committee. It was also decided to request the Society to arrange for Mr. Mallinson to attend a meeting of the Association in the near future to report on West Bromwich prescriptions, and to explain the work of the Bureau and the reasons for the proposed rebate.

Note.

The Drug Accounts Committee (Scotland) has issued "Memorandum VII." on the Insurance Acts, which deals specially with the use of "official and officinal" drugs, chemicals, and preparations instead of proprietary remedies. The Memorandum points out that the prescribing of proprietaries invariably adds to the cost of Medical Benefit, and also notes that under Article 40 of the Regulations practitioners who disregard this fact are liable to be surcharged. While the Drug Accounts Committee recognises the right of the insured person to have proper and sufficient medicine, it does not consider secret remedies and patent medicines to come within that category, and recommends that they should not be prescribed, supplied, or paid for. The Committee advises Insurance Committees to consult their Panel and Pharmaceutical Committees with a view to the issue to panel practitioners of a list of proprietaries and their equivalents, and the Memorandum gives lists of such proprietaries and their chemical equivalents or alternatives for the guidance of the local Committees. The Committee has also issued the following comparative statement regarding prescriptions dispensed in the first half-year of 1915 and 1916:

—	No. of Forms Allowed	Total Value	Average Value per Form
		£ s. d.	d.
Jan.-March 1916...	531,573	23,433 10 3	10·58
April	184,764	7,963 1 8	10.34
May	172,530	7,415 3 10	10.31
June	151,419	6,399 2 0½	10.14
For half-year ...	1,040,286	45,210 17 9½	10.43
Jan.-March 1915...	730,679	28,977 0 5	9.51
April	193,806	7,826 2 0½	9.69
May	171,915	6,938 12 8½	9.63
June	157,167	6,467 2 1½	9.87
For half-year ...	1,253,567	£0,208 17 3¾	9.61

A Practical Curriculum.

By Jay Mack.

"Do you want culture or utility in apprentices?" said Woolcock at Chester.

"A likely boy should do better than the drug-trade," said a Glasgow rector to Mr. Gilmour.

These two phrases show clearly to every thinking retailer what we want and what we are likely to get. Even the highest class of shopkeeping does not appeal to the "sons of the Manse" any longer, and the next twenty-five years must see such a boom in all kinds of manufacturing in Great Britain that we must be content to get boys and girls with quite ordinary education, and be prepared to teach them by easily graded exams. Ten years ago the Post Office was censured in Parliament and out of it as a blind-alley employer; now not a P.O. messenger-boy is allowed to drift away: scores of easy exams., each one teaching the men the work to be done. Each exam. carries a rise in wages, and they even have pamphlets on the advantages of the P.O. How is it done? Merely by common sense and Clark's College. They even teach them to read difficult old script writing; while we, who have life and death often depending on it, are left to acquire it, along with the other stinks, in the shop. We are examined on it, but not prepared for it.



Jay Mack.

Open the door wide from John o' Groats to Land's End.

Each Student
to have a page in the Registrar's Ledger.

Keep in Touch
by Post:
Letters when needed.
Books recommended.

To Earn Marks
from the start (say)

A Maximum up to the Minor Exam. of ...	1,500	
The Minor Exam.	500	
	2,000	1,500 a pass

Printed forms with questions and spaces for answers are all that the Registrar need send periodically. Even the most careless master will be glad to have his employés pushed on by a method which will actually teach them their daily work.

How to Get Marks.

Registration.	
1st month	50
6th month	25
12th month	10
Apprenticeship.	
In a Pharmacy	50
Approved Company Branch	10
Drug Store	2

Public companies cannot object; they have always been ready to pay extra for men from good pharmacies.

Apprentices	
Note Book (1st year)	100
Squire (1st Reading)	100
Essays on Visits.	
To a Wholesale	50
To Factories	50
To Breweries	50
To Fisheries	50
To Gas Works	50
Nature Study	50

Any boy or girl can start this work at home. The note-book and the essays to be sent to Registrar direct, certified by employer. The reading of "Squire" and other books to be certified by employer and local Secretary or doctor, who will ask a dozen or so questions on simple drugs and doses, or form queries to be sent direct by Registrar to the apprentice, or sent through the local Secretary.

Martindale (1st Reading)	50
Art of Dispensing	50
Commercial Chemistry	50

This would complete eighteen months to two years.

Local Exam.	100
Intermediate	
Ph. Society Exam.	200
Local Scholarship and Business Subjects.	
Ambulance Work	100

Make your curriculum elastic enough to take in all the science classes held anywhere and everywhere. Encourage apprentices to send up their reports for every such exam., and get the appropriate marks in the big ledger:

Apprentice Masters' Report	200
Other Situations	
Pharmacy	50
Good Company	50
Drug Store	10

This is most important, and will do away with the supply of women who have been a few months with a doctor or such flimsy apprenticeship.

Get it all down: get a value in marks on every situation when sitting for the Minor. Weed out the sheep from the goats.

Ph. College Report	400
Home Study	200

If students wish to study at home, let them do it; but the higher marks for a college report (if good) will continue (as at present) to send most of our students to colleges. Don't raise silly obstacles. Remember this is a free country. We want inducing, not compelling.

Minor Exam.

Four subjects, each subject to be passed once only ...	100 100 100 100
Use of Books allowed in Exam. as in Australia	
	2,000

The only division needed is to let each subject stand for ever when passed. If students care to take the four at once, let them, at age twenty. Cut away your hidebound rules. Let us have real freedom and helpful education.

Age twenty will do away with these hard cases of men who are twenty-one on the day of the exam. They cannot possibly be ready before twenty. Anyhow, don't make trouble.

At over age eighteen let those who wish to take half of the Minor:

1. Practical pharmacy;
2. Materia medica and botany included in materia medica;

leaving the other half for over age twenty:

3. Chemistry: Sound practical commercial theory. Analysis: Testing of water, milk, urine, and everyday drugs;
4. Higher pharmacy: Laws; compounding.

Failures of 60 per cent. would be impossible with this curriculum; we ought to get 100 per cent. of passes; in fact, the exams. would be a very small part of the test, just as Mr. Sargeant said when he condemned the testing of students in a few hours instead of over a long period of preparation.

Ten years ago Mr. Sargeant gave us a very sensible curriculum, and many of my ideas have been lifted from his and other men's curricula.

I want to show now how to carry out these ideas at a two hours'

Conference of Teachers and Retailers.

Present.

Mr. Duncan (Edinburgh)	Mr. Working Class (Town)
Mr. Sargeant (Leeds)	Mr. Yorkshire Moor (Town)
Mr. Wills (London)	Mr. Welsh Valley (Town)
Miss Buchanan (London)	Mr. Shetland Island (Town)
Mr. Gibson (Brighton)	

Practical men from small or medium businesses who take an interest in education preferred to the Aldermanic Bench men.

Agenda.

(1) To entirely remodel our exam. system in accordance with the every-day needs of the ordinary chemist.

(2) To adopt exams. and suitable curricula (*a*) which will not be a bar to the only class of apprentices we are likely to get; (*b*) which will ensure more efficient assistants; (*c*) which will get into the qualified ranks, in grades, every assistant of first-class experience at present employed as (1) unqualified assistant, (2) drug-store owner, (3) public dispenser, (4) Army and Navy compounder, such grades depending on their skill, knowledge, and experience (one part of such scheme to be the local vote or veto of the chemists of each locality in question), and that each such case be taken on its merits; (*d*) will be elastic enough to deal with all the grades in the drug-trade, in such a way as to better safeguard the public than at present and prevent in the future the creating of badly qualified assistants; (*e*) while leaving the way free and providing ample human material for the higher branches of our craft, such as (1) the men needed in the Army hospitals, (2) in the public services, (3) and in the analytical and manufacturing branches of our own drug-trade.

Resolutions.

Preliminary.

1. That wider latitude be granted in considering Leaving certificates from all ordinary Board schools. Those students who may later on go in for the medical, etc., continue as at present to pass the higher type of Preliminary if they wish: age over fourteen. That the fee be 10*s.* 6*d.*, *plus* 2*s.* 6*d.* yearly.

2. That the old Modified be revived in a new form to consist of: (*a*) By vote of the local chemists in business within two miles; (*b*) by certificates of character, education, skill, ability from previous employers; (*c*) by personal oral exam. in six centres. Fee, 2*l.* 2*s.*, *plus* 10*s.* yearly.

3. That the practical curriculum as collated by Jay Mack be adopted in its entirety. The questions to students to be left to the Examining Committee, and to be altered from time to time—every year if need be.

4. That postal tuition be encouraged for all juniors, and that Local Associations consider the question of scholarships suitable for each area.

5. That to this end the Manchester and other moribund scholarships be adapted to modern needs (if need be) by application to the Courts to vary the terms of the old bequests which have outlived their day.

6. That the Minor be divided and the first part act as an Intermediate exam. Fee, 2*l.* 2*s.*, *plus* 10*s.* yearly; second part, fee 2*l.* 2*s.*, *plus* 10*s.* yearly; 4*l.* 4*s.* in all, *plus* 10*s.* yearly, if whole examination taken at one time.

7. The Major to be adapted to suit the analytical and bacterial work needed by the Army and public health authorities. Syllabus to be revised every year. Fee, 5*l.* 5*s.*, *plus* 10*s.* yearly.

8. Titles: Major, D.Ph.; Minor, M.P.S.; Intermediate, A.P.S.

9. That Army and Navy compounders and such like be examined under the Modified examination system, (*a*) where their experience has been purely in hospitals and surgeries they be rated as A.N.C. (Army and Navy compounders). Fees to be arranged. (*b*) Where good shop experience they be eligible for election if over age twenty-six and over ten years' experience as A.P.S.

10. That the titles A.N.C. and A.P.S. permit the holders to take charge in the temporary absence of the principal for meals and recreation or illness, and for holidays of seven days if age eighteen, and twenty-one days if age over twenty-one.

11. That the Apothecaries' Hall examination, *plus* shop experience, be accepted as our Intermediate if the shop experience is considered varied and first-class. Each case on its merits. Fee, 1*l.* 1*s.*, *plus* 10*s.* a year. Applicable only to entrants who were over twenty-five in 1916.

12. The Bloomsbury School to be self-supporting or closed in two years to enable the lower fees to be charged for the various examinations instead of wasted on the school, and that the general every-day needs of the ordinary retailer be taken as the basis of all future pharmacy education.

I would try Napoleon's way (with that meeting) when he coded the Law of France into the Code Napoléon. He gave them so many hours to do the work.

[Jay Mack's views on apprenticeship we leave for another occasion.—Editor *C. & D.*]

Information Department.

INFORMATION WANTED.

Postal or telephone information with respect to makers or first-hand suppliers of the undermentioned articles will be appreciated

43/39. Canvin's pills.
42/46. Kingsbury Freekle Lotion.
45/64. "Koh-i-noor" tooth-paste
45/12. Dr. Walker's Apparatus for testing sugar.
46/20. Vermin-proof vest.
42/69. "Hashra."

INFORMATION SUPPLIED.

Inquiries regarding the following articles have been answered. The information as to supply will be given to others who send a stamped, addressed envelope to the Information Department, The Chemist and Druggist, 42 Cannon Street, London, E.C.:

"Alvol" anæsthetic, 46/29
"Cadum" ointment. 46/35
Canada balsam, 45/17
Cardboard boxes, 43/58
Catgut, 30/66
"Chloros," 27/65
Clark's condition powders, 40/72
Cole's Ossidine, 39/20
D'Jerkiss perfume, 38/47
"Do-well" feeder, 42/70
"Drummer" dyes, 27/66
Epsom salt, 45/10
"Eureka" tablet machinery, 27/48
"Ever Ready" electrical specialities, 46/12
Fraser safety corn-plane, 45/13
Fullers' chocolates, 32/13
"Icilma" cream, 45/55
"Intramine," 42/16
Jodelite, 30/67
Lauder Brunton's snake-bite remedy, 42/42
"Laxans," 28/68 and 40/15
"Lnargol," 28/27
Magnesium ribbon, 35/11
Mennen's talcum powder, 37/20
Milk casein, 46/46
"Neufaline," 46/38
"Novarsenobenzol," 44/25
"Oatine" cream, 45/550
Paraphenylenediamine, 46/42
"Petresol," 42/17
Powder-puffs, 47/28
St. George's embrocation, 36/16
"Sen-Sen," 39/13
Snellen's artificial eyes, 35/53
Sodium hyposulphite, 37/68
"Sorbefacin," 33/39
Steel's gout and rheumatic pills, 46/19
Stockholm tar, 38/47
Styptol tablets, 26/47
Tablet machinery, 27/17
"Tarasp" water, 32/45
Terpineol, 42/18
Thermometers, 34/19

Index Folio 876

Scientific Progress.

Temperatures under this heading are on the Centigrade scale.

Benzyl Benzoate.—In the course of the preparation of a somewhat large quantity of benzyl benzoate (a substance now used so largely by perfumers as a solvent for artificial musk and other synthetics, and also as a fixative agent) the Earl of Berkeley finds ("J.C.S." for June) that the yield obtained by the method of Claisen (treating benzaldehyde with benzyl alcohol which is first converted into sodium benzoxide) may be considerably improved by taking both the alcohol and the aldehyde dry and freshly distilled. Under these conditions twenty-four hours on a water-bath is sufficient, instead of several days, to ensure the completion of the reaction. From 30 c.c. of benzyl alcohol, 2.3 grams of sodium, and 300 c.c. of benzaldehyde, he obtained about 230 c.c. of benzyl benzoate, together with about 35 c.c. separated from the higher fractions.

A New Sesquiterpene Alcohol.—Semmler & Liao ("Berichte," 1916, 794) have examined the solid material separated from oil of Manila elemi. In it they have recognised a new sesquiterpene alcohol, which they have named elemol. It can be purified by conversion into its benzoate and then hydrolysing this ester. The alcohol has the formula $C_{15}H_{26}O$, and it and the benzoate have the following characters:

	Elemol	Benzoic Ester
Sp. gravity... ...	0.9411 at 20°	1.0287 at 20°
Ref. index	1.5030	1.5378
Rotation	−5°	−6°
Boiling-point	...152°–153° (17mm.)	214°–218° (10mm.)

Elemol can be dehydrated by the action of acid sodium sulphate, yielding the sesquiterpene elemene, $C_{15}H_{24}$, a liquid of specific gravity 0.8797 and refractive index 1.4971. Elemol is apparently a monocyclic sesquiterpene alcohol, the first of its type to have been found occurring naturally, and hitherto no such compound has been prepared artificially.

The Valuation of Cinnamon and Vanilla.—Von Fellenberg ("Chemiker Zeitung," 1916, I., 390, and II., 391) gives the following methods for the valuation of cinnamon and vanilla, depending on colorimetric tests. One gram of the powdered cinnamon is placed in a flask with 40 c.c. of 95-per-cent. alcohol, and the mixture heated to incipient boiling for ten minutes under a condenser. From 30 to 35 c.c. of the alcohol is then distilled, 100 c.c. of water added to the flask, and the distillation continued until the distillate measures 100 c.c. Five c.c. of this distillate is then mixed with 2 c.c. of a 5-per-cent. solution of isobutyl alcohol in 95-per-cent. alcohol, and with 3 c.c. of 38-per-cent. ethyl alcohol. Twenty c.c. of strong sulphuric acid is then added, and after forty-five minutes the coloration developed is compared with that from a known quantity of cinnamic aldehyde under identical conditions. The standard solution of cinnamic aldehyde should be of 2 per cent. strength in 38-per-cent. alcohol; it may be prepared from the aldehyde-sulphite compound and standardised by a bromine-iodine titration. Nine samples of Ceylon cinnamon were found to contain from 1.3 to 1.8 per cent. of cinnamic aldehyde; seven samples of cassia-bark contained 1.23 to 2.77 per cent., and a sample of cinnamon-flowers contained 3.73 per cent. In the valuation of vanilla the author boils one gram of the finely divided substance under a reflux condenser with four successive quantities of about 20 c.c. of water. The combined extracts are diluted to 100 c.c., and 0.5 gram of kieselguhr added and the mixture filtered. Fifty c.c. of the filtrate is extracted five times with ether (free from alcohol), using 150 c.c. of the solvent in all. The ethereal solution is treated with solid calcium chloride, filtered, evaporated to a small volume, and the remainder of the ether removed by a current of air. The residue is warmed to 60° with 30 c.c. of water, the solution filtered, and the filtrate diluted to 100 c.c. Five c.c. of this solution is then treated with 5 c.c. of a 1-per-cent. solution of isobutyl alcohol in 95-per-cent. alcohol and 20 c.c. of concentrated sulphuric acid, and after forty-five minutes the coloration produced is compared with that developed by a known amount of a standard solution of vanillin. It is recommended that the vanillin should be determined separately in the outer and inner portions of the pod; in normal vanillas the vanillin is distributed approximately evenly throughout the tissues. Any difference between the two determinations would indicate a partial exhaustion of the outer portions of the beans.

An Epidemic of Poliomyelitis (infectious paralysis) is raging in New York.

Observations and Reflections.

By Xrayser II.

The Letter of the Owners of Proprietary Articles

to the Australian Press puts their case unanswerably, and shows at once the injustice, the futility, and, I may add, the hypocrisy (conscious or unconscious) of the proposed action of the Senate against patent medicines and such-like articles of commerce. It is unjust, because it robs the proprietors of such articles (and them only of all inventors) of the fruit of their labour and research; it is futile because, so far from protecting the public from the evils of self-medication, it opens the way to their immense increase by making the composition of popular remedies a matter of common knowledge; and it is hypocritical because, as the letter asserts, it is really aimed, not at the protection of the public, but at the killing of the trade in foreign products. It exhibits, indeed, almost every vice of "protective" legislation, and is a valuable object-lesson for us in view of the agitation, now being set afoot in many quarters, for protective imposts here when the war is over. I do not say that these may not, as a temporary measure, be necessary in some exceptional cases, but I believe Mr. Pullar was right in his courageous declaration that even British dyers could hold their own against the world without this expedient, and I have no doubt at all that to adopt the protective system generally would for us be a suicidal policy.

The Criticism of the Insurance Act

by members of the British Medical Union (to which I referred last week) has left an aftermath of squabbling between panel doctors in the daily papers, chiefly on the subject of stock mixtures. The discussion reflects little credit on the profession. It reminds one of the old saw about the washing of dirty linen in public. Dr. Harry Roberts says it is "absolutely untrue" that by keeping down the average per patient to 1*s.* 6*d.* the panel doctor secures the floating sixpence for himself, but Dr. Edwin Snaith shows that this statement is only formally incorrect; it is true in any Insurance area in which all the doctors keep within this figure. He admits that in the London area the floating sixpence has not of late found its way into the doctor's pocket, but adds sarcastically that since the stock mixtures now recommended are to cost, when dispensed, less than 2½*d.* per bottle, the pecuniary outlook may be more hopeful in the future. To this "sneer" Dr. Cooper, of Gray's Inn Road, makes a very naïve reply. He asserts that panel practitioners have not been cajoled from the path of duty by these economical devices; it is the non-panel doctor who "almost exclusively" uses stock mixtures, which, however, Dr. Cooper defends. He forgets that it was one of the chief objects of the Insurance Act to save the poor patient from such doctoring as this; and if stock mixtures are not objectionable why should the man who most uses them be stigmatised as "the chief offender"? This newspaper war does not directly affect us, but we may welcome it as likely to open the eyes of the public. I have once or twice suggested that pharmacists might advantageously make a public statement of their views with regard to cheap physic, but it may be as well to leave the matter in the hands of the doctors.

The Famine in Drugs

in Austria was to be expected, but no one could have anticipated that the dearth would be felt over such a wide area or that such a large number of drugs would be affected. In so far as tropical and sub-tropical plants are concerned, such as aloes, senna, and the like, and even such drugs as castor oil and Chinese rhubarb, one would naturally expect to find a deficiency, since these are either wholly grown in the Allies' country or carried by Allies' ships, and a shortage was thus imperative. But we have all along been told that the Central Empires have large supplies of drugs and chemicals ready to dump on the market, and therefore it comes as a surprise to find that much of this story is pure bluff. There is, of course, the alternative that Germany is looking after herself and refusing to let Austria have supplies, but, if so, this sheds a curious light on the union of hearts of which so much has been made. The way in which substitutes are recommended to be used is highly suggestive, and clearly indicates that the pinch is really being felt. Considering how many of our vegetable drugs come from Central Europe, it is very surprising that we in this country are not much worse off than we are.

The Prodigality of Nature

is at least as obvious as her modesty, and I have never been more impressed by it than during the last few weeks, spent in a country almost entirely overrun by bracken and heather and other wild growths of which very little, if any, use appears to be made by anybody. There are a few wild bees among the heather here, and the bracken is to a certain extent cut for "bedding," but hundreds of acres of both are virtually wasted, so far as any direct economic use is concerned. Certain paragraphs of your last week's Scottish News, and the reference to the demand for sphagnum moss in your recent Summer Number, suggest the desirability of research and experiment into possible uses of many natural products at present neglected, though our more necessitous forefathers found many of them serviceable in various ways. Surely Providence intended that it should be so! Bracken had a reputation in medicine at one time, and mosses of several kinds were official both in England and Scotland. They were largely used as styptics and absorbents for wounds and other sores, as well as internally for hæmorrhages—the moss of the skull of a dead man being, it was thought, specially indicated in head-disorders. Cup moss was given for chin-cough, wine being the favourite medium for internal administration. Tree moss was thought more "cordial" than ground moss, especially if it grew on an oak. Doubtless many of these notions were mere superstitions, but where there is so much smoke there must be some fire.

Six Months after the Tercentenary

of Shakespeare's death comes that of the birth of a very different man, who well deserves to be remembered, especially by pharmacists. Nicholas Culpeper, the first translator of the London Pharmacopœia, was born October 18, 1616, and if there is any foundation in fact for his astrological beliefs it was appropriate that his birth should occur when the sun was in Scorpio, for he carried a sting in his tail and was extremely active in the use of it. He was the son of a clergyman of good family, Wootton says of a Nonconformist, but that term might then include members of the Church of England, and as Nicholas was for a time a student at Cambridge it is probable that he belonged, at least in his youth, to the Puritanical section of that Church. A Puritan he certainly was later in life, and a Commonwealth man. His apprenticeship to medicine was served with an apothecary of Great St. Helen's, Bishopsgate, and his own practice was carried on in Spitalfields. He is said to have been a good scholar and successful practitioner, and was evidently a man of amazing industry, for he left no fewer than seventy-nine works behind him, though he died at the early age of thirty-eight. Most of these were in manuscript. Those by which he is best remembered are his "Physicall Directory," first published in 1649, but reissued in 1654 under the title of "Pharmacopœia Londinensis: or, The London Dispensatory"; and his Herbal, "The English Physitian Enlarged." The Dispensatory was held to be an infringement of the monopoly of the College of Physicians, and brought him into violent collision with the profession. It is impossible to approve of the spirit and style of this work, but it does not deserve the abuse it received at the time. Its faults are mainly due to the boundless conceit of the author. It is comparatively free from the astrological nonsense which so greatly disfigures the Herbal, and scurrilous as are many of his strictures on the College, they are often, in substance, sound and sensible.

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Emulsified Phenoloid Disinfectant; 18/20 co-efficient.
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"Sanitas Formitas Outfits."
"Sanitas Formigators."
"Sanitas Drain Testers."
"Sanitas Polishes."
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Editorial Articles.

A Practical Pharmacy Curriculum.

It is a curious circumstance that in the discussion which has taken place regarding the "revival" or "uplift" of pharmacy comparatively little has been heard from the retail pharmacist or the unqualified assistants, who, one would think, are the persons mainly interested in such a question. The meeting held in London some weeks ago was addressed almost exclusively by representatives of the teaching, professional, and official classes, and the speakers with one consent dilated on plans and methods of stiffening the examinations, not for themselves—for they are all comfortably settled in life—but for those war-weary assistants who are valiantly fighting the country's battles for civilisation or for the still younger persons who have not yet realised the difficulties they have to face. One might imagine a meeting of chemists over military age discussing means of recognising the sacrifices which these young men have made at a critical stage of their career. A further flight of imagination might centre the discussion round the details of a modified examination, with the double purpose of recognising the services of these young men and filling up quickly the depleted ranks of the qualified men, and so preventing attacks from interested groups who are desirous of penetrating into the ranks with practically no qualification and certainly no claims for recognition. The reality, however, introduces us to a group of pharmacists, meeting at a time when business pharmacists and assistants, either through overwork or war-work, cannot be present, and rushing out plans for making the examinations more difficult in the future. The Educational Number of The Chemist and Druggist gives us an opportunity of printing some suggestions for a curriculum which has the merit that it is the "thinking aloud" of a chemist and druggist engaged day by day behind the counter and acquainted with the needs and the difficulties of the retail trader.

The word "curriculum" has a rather sinister sound to the ears of most students of pharmacy, who think that it necessarily involves a year or two's course at a school or college away from home, and at considerable expense. For the son of the well-to-do pharmacist this course is only part of his day's work, and it causes him no anxiety and no expense, and is, in fact, a relaxation from other duties more or less irksome; but it is otherwise with the majority of young men who enter our calling. If an expensive curriculum, such as is sometimes talked of, is ever put into effect, it will prevent that class from which most of our apprentices are drawn from thinking of pharmacy as a possible career for their sons. But the "curriculum" proposed by "Jay Mack"

has nothing in common with the theoretical schemes that have been produced in past years by educational enthusiasts. Briefly stated, Jay Mack's scheme provides for the intelligent and sympathetic supervision of every student's career by the Registrar of the Pharmaceutical Society from commencement to the examination stage. The ideas and ideals underlying the scheme are admirable, and if we could only translate them into some workable form they would go far to resolve many of the difficulties now experienced by the trade. Whether the proportion of marks allowed for the different sections of the student's work is well balanced is a matter for discussion. The educationist will maintain that far too few marks are allotted for the Minor, while the business expert will insist that the apprenticeship is of the greatest practical value, and hence the marks for it should bulk higher when estimating the ultimate result. On the whole, however, the scheme is worth the consideration of all who are interested in removing the injustices of the effete system which at present bars entrance to the trade of the chemist and druggist.

The Preparations of Coca.

Reference was made last week (p. 43) to the position of coca and its preparations under the Cocaine Regulations, in which it was pointed out that the definition of cocaine seemed to exclude coca and its preparations. We have now received the following letter :

312,966/60. Home Office, Whitehall,
August 11, 1916.

Sir,—In reply to your letter of the 7th instant, I am directed by the Secretary of State to say that the Regulation does not apply to the natural coca-leaf, but any liquid extract or preparation therefrom, containing 0.1 per cent. or more of cocaine, would come within the Regulation.

I am, Sir,
Your obedient servant,
Malcolm Delevingne.

The Editor of The Chemist and Druggist,
42 Cannon Street, E.C.

It will be noted, therefore, that a chemist may sell coca-leaves to be added to wine, to make coca-wine, but he must not sell liquid extract of coca for this or any other purpose unless it is ordered by a medical man. This brings us to another inquiry we have received regarding the sale of coca-wine. As ordinarily prepared, coca-wine does not contain so much as one in a thousand of cocaine, and therefore is not included in the Cocaine Regulation. There are two varieties of coca-wine, which may be distinguished as excisable and non-excisable. Both are generally made from the leaves, the excisable kind being weaker in cocaine than the non-excisable variety. The reason for this is that many years ago the Board of Inland Revenue laid it down that it did not regard coca-wine as non-excisable unless it contains at least ½ gr. of cocaine to the fluid ounce, and also a sufficient quantity of the extractive matter from the coca-leaves to render it unfit for use as a beverage. Following this ruling, a non-excisable coca-wine is usually made by fortifying with cocaine a wine made with the leaves, because if made entirely from the leaves the product would be very unpleasant. Such a wine contains less than one in a thousand of cocaine. There is no official formula for coca-wine in this country, although a standard is laid down in the Pharmacopœias of some other countries. Elixir of coca is occasionally met with, and probably comes within the Cocaine Regulation, but, as there is no official standard for the elixir, this can only be decided from an inspection of the formula. Coca chewing-gum is as a rule only slightly flavoured with coca-extract, and doubtless is outside the Regulation. We do not think such chewing-gum has much sale in this country.

The "British Medical Journal," dealing with the question of dispensing cocaine, refers as follows to the requirement, 40 B (*b*), that the total amount of cocaine to be supplied on a medical man's prescription shall be stated except in the case of a proprietary medicine (see *C. & D.*, August 5, p. 34) :

> The requirement that the total quantity of cocaine ordered in a prescription shall be specified is perhaps intended to prevent the possibility of a patient obtaining double the number of doses ordered, though it may be merely to prevent any doubt or ambiguity as to the exact number of doses required. The remarkable exception of proprietary articles from the operation of this clause, provided the quantity of the proprietary article itself is stated, appears to be a most unfortunate error of judgment; if the cocaine-strength of a proprietary article is not known, and therefore the total quantity of cocaine cannot be stated on the prescriptions, this appears to be an excellent reason for requiring the proprietor to declare the strength on the label, and if proprietary medicines had not been thus illogically exempted such declaration of strengths would have undoubtedly resulted from the requirements of this clause.

Imports of Soap into Australia.

A Message reached London last week, and was freely circulated in the daily Press, to the effect that "the Federal Government had decided to prohibit the importation of soap into the Commonwealth, the chief object being to encourage the production of glycerin." The London manager of "The Chemist and Druggist of Australasia" has, however, since received a cable from the editor of that paper in Melbourne which modifies the previous message, and shows that there is no need for alarm so far as British manufacturers are concerned. What is being done is to prohibit the importation of foreign soaps, and evidently no restriction is intended on the British product. It is also proclaimed that in cases of a special nature the consent of the Minister in Australia may be obtained for importing soap other than British.

Liquid Paraffin.

Some time ago "The Lancet" drew attention to certain points in regard to quality of paraffinum liquidum, B.P. It was suggested that for medicinal purposes a minimum viscosity of 105 seconds at 100° F., measured on Sir Boverton Redwood's standard viscometer, should be insisted upon. "The Lancet" states that following the publication of this standard the fluorescent, "thin," ill-refined oils were withdrawn, and test purchases made from pharmacists proved to be highly refined and satisfactory liquid paraffin. Recently, however, a number of oils of American origin have appeared which, while free from fluorescence, odour, or taste, do not conform to the British Pharmacopœia standards. In most cases the sp. gr. is too low, being under 0.860. In many cases the oils give an intense blackness under the sulphuric-acid test. The viscosity is also very low; in six samples this varied from 73½ seconds to 100 seconds, the sp. gr. being 0.853 to 0.859. These samples, states "The Lancet," are quite unsuitable for medicinal use. American oils are, however, made which conform to the requirements of the B.P. and the viscosity test. It is suggested that purchasers should demand that the letters "B.P." are on the label of the liquid paraffin.

Wound Treatment.

One of the revolutions in surgery that have taken place during the war has been in the methods of treating wounds. Many old methods have been improved and new ones evolved. The earliest antiseptic to become popularised during the war was tincture of iodine, which has been put up into ampoules and millions supplied for the use of troops in the field. Sir Rickman Godlee went back to Lister's original use of pure carbolic acid as an application to wounds, with the double cyanide gauze as a dressing. Sir Watson Cheyne found Martindale's lysol a perfect antiseptic for wounds, and he also evolved a form of paste-dressing. Mr. G. Lenthal

Cheatle combined phenol and mercury perchloride in one solution, and another surgeon employed mercury perchloride with serum constituents, these being put up in tablet form as "hydrion." Then came the invention of "eusol" and "eupad," liquid and solid forms of bleaching-powder combined with boric acid. Other surgeons advocated garlic-juice, urea, enzymol, turpentine, liquid paraffin, and salicylic acid for treating war wounds. Irrigation methods without dressings were brought in by Sir Almroth Wright, and also the use of saline tablets inserted in wounds. Then came chloramine, or toluene sodium sulphochloramide, which is used as an antiseptic solution and also for medicating dressings. The newest paste-dressing for infected suppurating war-wounds is "Bipp," invented by Mr. Rutherford Morison. It consists of bismuth subnitrate 1 part, iodoform 2 parts, made into a thick paste by means of liquid paraffin. This is packed into the cleaned wound, covered with gauze and an antiseptic pad, and kept in place with sticking-plaster and a bandage.

National Income and Debt.

During the debate last week in the House of Commons on the Civil Services and Revenue Departments Estimates, the Chancellor of the Exchequer (Mr. McKenna) made some interesting observations as to the relation of the national debt and the country's income. He said the total indebtedness on March 31 next will, it is estimated, be 3,440,000,000*l.* This was calculated as being 2,554,000,000*l.* at the present time. From the total indebtedness at the end of March next can be fairly deducted the advances made to Allies and Dominions at the same date of 800,000,000*l.*, leaving our indebtedness 2,640,000,000*l.* The national income—not the Exchequer revenue—may be put at about 2,500,000,000*l.*, or perhaps 2,600,000,000*l.* This estimate of the national income is based upon the calculations of several authorities. The total indebtedness on March 31 next is, therefore, just about equal to one year's national income. The best estimate of the country's total national wealth—that is, capital wealth—is 15,000,000,000*l.*, which it is agreed is a low estimate. The indebtedness is, therefore, but a small proportion of the national wealth. There is every reason to be proud of the way in which British credit has stood the financial strain, because not only have these gigantic sums been borrowed at reasonable rates, but an enormous revenue has been raised by taxation.

The Spelling of Cinchona.

A Correspondent of "The Lancet" supplies an interesting note regarding the spelling of cinchona. As is well known, the late Sir R. Clements Markham, F.R.S., pleaded that this word should be spelt correctly as "chinchona," but common usage adhered to "cinchona." The bark was named from the Countess of Chinchon. Now the countess's name itself is corrupted by some modern lexicographers into "Cinchona," in order to tally with the corrupted botanical name. The cause of the confusion is explained, according to "The Lancet" correspondent, in the following account which has been partly translated from Spanish from a South American source and amplified from other sources :

The Count of Chinchon, Don Luis Fernandez de Cabrera, was Spanish Viceroy of Peru (1629-1639), and his wife, Donna Ana de Ossorio (1576-1639), is celebrated as propagating the use of cinchona-bark (she was cured of fever by it at Lima). When she returned to Spain she made known its qualities, and Cardinal de Lugo carried it to Rome, where it was called Lugo's powder and also "the Countess's powder," but the Italians wished to give it the name of the countess. Then arose a difficulty, as "Chinchona" in Italian pronunciation would be "kinkona," but "cin" would be pronounced "chin" as in Spanish (and English). This gave in Italian the correct pronunciation of the first syllable, but, of course, an erroneous spelling. Chinchon is a town in Spain twenty-five miles from Madrid.

Aconite Preparations.—Will readers please note that in the physical constants for tincture and liniment of aconite which were printed in the Summer Number from Squire's "Companion," the figures for the two preparations were transposed?

Westminster Wisdom.

By the "C. & D." Parliamentary Representative.

The Parliamentary Adjournment.

It is expected, according to present arrangements, that Parliament will rise on Wednesday next, and reassemble in the first or second week in October.

Registration of Business Names Bill.

The Prime Minister intimated in the House of Commons on August 16 that when Parliament reassembles in the autumn he will afford facilities for the passage into law of the Registration of Business Names Bill.

Ministry of Commerce.

A memorial is being prepared for presentation to the Prime Minister by the Association of Chambers of Commerce urging the establishment of a Ministry of Commerce in which would be included the Commercial, Patents, and other existing Departments of the Board of Trade.

British Dyes, Ltd.

The Home Secretary announced on August 16 that twelve visits have been paid by factory inspectors during the present year to the works of British Dyes, Ltd., Huddersfield. Cases of eczema were not numerous. No conscientious objector has been engaged in the manufacture of picric acid—a high explosive—and there have been no complaints.

Export of Benzin.

The Acting President of the Board of Trade informed Major Rowland Hunt, in the House of Commons on August 14, that he will have the necessary inquiry made as to the period during which the prohibition of the export of petrol and benzin from Roumania was effective, and whether or not there has been any prohibition of export from Roumania of kerosene, lubricating, and fuel oils, or of other of the various petroleum products which are necessities of war.

The Supply of Cocaine to Dentists.

An interesting question in regard to the cocaine controversy and the recent regulations issued by the Home Office was raised in the House of Commons by Mr. MacCallum Scott this (Thursday) afternoon. The hon. member desires to ascertain from the Home Secretary whether, if he is satisfied that novocaine is an effective substitute for cocaine, he will render his restrictions in regard to the supply of cocaine applicable equally to all dentists, registered as well as unregistered.—Mr. Samuel said he was not prepared to do as requested.

Production of Nitrates.

Mr. F. D. Acland informed Mr. Hadyn Jones on August 15 that the question of increasing the supplies of nitrates is being actively considered. It is doubtful, however, whether our available water-supplies are sufficient to make production by water-power the means best suited to this country. He had no knowledge that the U.S. Government proposes to appropriate $20,000,000 to determine the best process and secure the necessary water-power for the production of nitrates.

Sulphate of Ammonia.

In the House of Commons Mr. F. D. Acland, for the Board of Agriculture, informed Major Hunt that he is not correct in stating that farmers have to pay full market price for their fertilisers, as he (Mr. Acland) is informed that sulphate-of-ammonia makers have recently announced their willingness to sell sulphate to manure-mixers and farmers at prices considerably below the ordinary market prices likely to prevail for export, which represent an increase on average pre-war prices considerably less than that which the farmer will receive for his wool. He hoped that farmers would take advantage of this position in placing their orders for sulphate in good time and in large quantities.

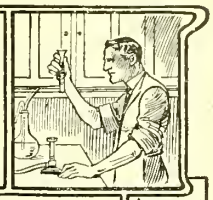
Brunner, Mond & Co., Ltd.

Mr. W. C. Anderson inquired in the House of Commons on August 15 as to the employment of seventy soldiers who had been lent for the last two months to Brunner, Mond & Co., Chemical-works, Lostock, Northwich.

Mr. Forster said he dealt on the previous day with the general question of employment of soldiers for industrial work. These men are constantly passing into and out of military service. As a rule the use of these working parties is limited as far as possible. In future they would get a proper rate of civilian wages, less a proportionate reduction. There are practical difficulties in the way of placing them in a special reserve and allowing them to retain their civil rights. In cases where men are released for munition-works they are passed into a reserve, and the practice suggested is being carried out.



EDUCATIONAL INFORMATION



Learning by study must be won, 'twas ne'er entailed from sire to son.

Introductory.

The first effect of the Pharmacy Act, 1868, upon the retail drug-business was to extend the appreciation of systematic methods of scientific education as applied to the practice of Pharmacy. In anticipation of this The Chemist and Druggist started in January 1868 the Corner for Students, which, to begin with, was simply queries and problems. These were chemical, and the first to respond were J. Robinson, Chester-le-Street; I. Tansley, Kingsland Road; A. Nicholls, Penzance; T. S. Sanders, Salford; J. Young, Leicester; and W. W. C., as reported in the *C. & D.*, February 15, 1868. The Corner has continued without interruption until now, and has done excellent work for pharmaceutical education. In due course, educational information relating to Pharmacy and Medicine became a feature of one of the monthly issues, and as the years have gone on the utility of the information given in our Education Numbers has increased, and has kept pace with expanding professional education. But on no occasion during the past half-century have the conditions of British educational establishments been so upset as they are at present. This is due to the war, and the conditions are accentuated in our case on account of the demand that the nation has made for trained men in chemistry and medicine to assist in special departments of the military and naval operations, or the conditions that follow. It would be wrong, nevertheless, to regard the education and examination arrangements as having been altered by the war; the modifications are solely in institutional arrangements consequent on men having gone to the Front.

The entrance conditions for qualification in pharmacy, medicine, and allied professions are closely alike, but are not reciprocal unless a certain standard is reached. For example, it is a mistake to suppose that an examination which entitles one to registration as a student of pharmacy will also provide entrance to medicine or science, but the Medical Preliminary examination usually covers all the subjects for pharmacy, and the Matriculation examination for science is also good for the other professions dealt with herein. The student should therefore acquaint herself or himself with the conditions applicable to the profession which she or he is entering upon.

Pharmaceutical Preliminary.

The conditions differ in Great Britain and Ireland. The Pharmaceutical Society of Great Britain, whose Secretary and Registrar is Mr. W. J. Uglow Woolcock, 16 Bloomsbury Square, London, W.C., prescribes the subjects of its First or Preliminary examination, but does not conduct it, and it has no power to prescribe that the examination should be passed before apprenticeship: it has merely to ensure that persons register as students in time to enable them to go through the formalities of application for the Qualifying examination. The Society recognises the Preliminary examinations of nineteen universities and other examining bodies, and the Registrar is empowered to accept certificates of having passed the six required subjects at an examination of any other legally constituted examining body approved of by the Council of the Society.

The required subjects of examination are English, arithmetic, geometry, algebra, and two optional subjects. Latin is no longer obligatory before registration as a student, but we strongly recommend all students to take the language at this stage if possible. The six subjects may be taken at not more than three examinations. The most popular of the Preliminary examinations is that of the *College of Preceptors*, more than half the students presenting such certificates, and next in order of preference are the Oxford and Cambridge Locals, these covering another 20 per cent. of all who register. *The College of Preceptors*, Bloomsbury Square, London, W.C., holds examinations for Senior and Junior Certificates four times a year—viz., in March, June, September, and December. Both grades are accepted by the Pharmaceutical Society, provided that the candidates pass in English, arithmetic, algebra, geometry, and two other subjects. The six subjects may be distributed among three examinations. Fees, 25*s.* and a local fee in March and September, 15*s.* and a local fee in June and December. For further particulars apply to the College.

The *Educational Institute of Scotland* (Secretary, Mr. H. Cameron, 34 North Bridge, Edinburgh) holds an examination specially for pharmaceutical students in January, April, July, and September in Edinburgh, Glasgow, London, Liverpool, and Dublin, and in January and July in Aberdeen and Dundee if a sufficient number of candidates apply. This is the examination usually taken by young chemists in Scotland. Fee, 1*l.* for the first examination and 10*s.* for any subsequent one.

Welsh students usually present certificates of the Central Welsh Board. Full particulars regarding these and other suitable examinations are given in the "Complete Guide to Preliminary Examinations for Pharmacy, Medicine, Dentistry, Veterinary Surgery, and Science," published by The Chemist and Druggist at 2*s.* 6*d.*, post free 2*s.* 9*d.* The "Guide" tells students all about how to prepare for the examination, and gives other essential particulars. The next step in qualification is to become a chemist and druggist by passing the Minor examination of the Pharmaceutical Society, as provided by the Pharmacy Act, 1868.

In Ireland persons who propose to register as pharmaceutical chemists in accordance with the Pharmacy Act, 1875, are required before beginning an apprenticeship of four years with a person of approved qualification (see p. 53) to pass the Preliminary examination conducted by the Pharmaceutical Society of Ireland, which, however, accepts in place of it certificates of certain examining bodies. In 1915, of those registered, forty-nine passed the Society's examination and thirty the examinations of other bodies. The subjects of the Society's examination are: Latin, English, arithmetic, algebra, geometry, and either French or German or any modern language. It is held in Dublin on the first Thursdays and following days in January, April, July, and October, at 11 a.m. A fee of 2*l.* 2*s.* must be lodged with the Bank of Ireland to the credit of the Society, and the receipt forwarded to the Registrar (Mr. A. T. Ferrall), 67 Lower Mount Street, Dublin, at least fourteen clear days before the commencement of the examination. The re-examination fee is 10*s.* 6*d.*

Veterinary Preliminary.

The subjects of examination are very similar to those required of pharmaceutical students, save that in the Veterinary examination English includes history and geography. Latin is optional. In the College of Preceptors' Junior examination and the Educational Institute of Scotland examination all the subjects must be passed at one examination, but for the other examining bodies the subjects may be taken at not more than two examinations.

Medical and Dental Preliminary.

The General Medical Council insist on all candidates desirous of registering as medical students presenting certificates including Latin, though it is interesting to note that they cannot refuse to register the names of qualified medical men who may not have passed an examination in Latin. The Universities of London and Leeds both now regard Latin as an optional subject. In the London Matriculation examination all the subjects must be passed at one examination, but for most of the examining bodies whose certificates are accepted by the General Medical Council the subjects may be passed at not more than two examinations. The regulations of the English Conjoint Board have been relaxed for the time being, and many certificates are being accepted for registration which would not have been accepted before the war. At the present moment there is an exceptional opportunity for pharmaceutical chemists over forty obtaining a medical qualification with a minimum period of study. Those who wish further particulars with reference to this matter should communicate with Mr. F. G. Hallett, Secretary of the Conjoint Board, 8-11 Queen Square, London, W.C.

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Pharmacy.

It may be useful to mention for the benefit of young people that until the year 1841 no attempt was made in the British Empire to require or regulate the qualifications and practice of those who carried on the business of chemists and druggists. Then the Pharmaceutical Society of Great Britain was founded; in 1843 it obtained a charter which provided for members, associates, and apprentices. Examinations were independently provided for these—Major for members, Minor for associates, and Preliminary for apprentices. A Pharmacy Act passed in 1852 legalised these examinations, but did not make them compulsory; and in 1868, when a Pharmacy Act was passed "to regulate the sale of poisons, and alter and amend the Pharmacy Act, 1852," the Minor examination was adopted as that suitable for the qualification of "chemist and druggist," which was for registration under the Act. The title "pharmaceutical chemist" was not interfered with, but the old condition of passing the Preliminary and Minor examinations before going in for the Major was continued. From time to time changes have been made by by-law, so that the Minor examination of to-day is really a stiffer examination than the Major was in 1868; but the only statutory examination was amended in the 1908 Act, to enable the Pharmaceutical Council (1) to require from candidates evidence of sufficient preliminary practical training in the subjects; (2) to provide for (*a*) registration of Colonial pharmacists (reciprocal) or (*b*) qualified military dispensers or (*c*) certified assistants to apothecaries; and (3) to provide for a curriculum of study and divide the examination into two parts. These 1908 conditions have not been fully adopted, the conditions in regard to the Minor or Qualifying examination being practically the same to-day as they were before 1908. The practice in the trade has always been to pass a Preliminary examination as soon as possible: the wise thing is to get it over before leaving school. It will be noticed that all this applies to Great Britain only, for Ireland did not get a Pharmacy Act until 1872, and that island is independent of Great Britain; nevertheless, the law of the latter is the basis of the pharmacy and poisons laws of the British Empire.

Still keeping ourselves to Great Britain, we repeat that in order to become a chemist and druggist or pharmacist, so as to carry on legally the business covered and protected by the 1868 Act, it is necessary to pass an approved Preliminary examination and be registered as an apprentice or student of pharmacy. This is done by sending two guineas to the Registrar (Mr. Woolcock, 16 Bloomsbury Square, London, W.C.), but beforehand get from him a copy of the regulations and an application-form, which gives all the particulars. Apprenticeship is not obligatory, but no person is allowed to enter for the Minor or Qualifying examination until he or she is twenty-one years of age and produces a declaration that he or she has been *practically engaged in the translation and dispensing of prescriptions for three years prior to applying for admission to the examination*. Obviously this means a three-years' apprenticeship, although three years as a dispenser to a medical practitioner meets the case, so also three years' service abroad in a Colony or foreign country, provided the declaration is signed by an approved person, such as a registered chemist and druggist or registered medical practitioner. In most cases it is the aim of the student to make retail pharmacy his life's work, and the value of a good apprenticeship under an expert pharmacist and competent business man cannot be over-estimated. The apprenticeship should include a real training in the practice of pharmacy, and, in addition, the apprentice should endeavour to acquire a knowledge of the art of salesmanship and of shop routine and business procedure, which will prove of the utmost value to him in after-life. It cannot be too strongly impressed on the anprentice that during his period of pupilage something should be done in the way of preparation for the Minor examination. He should map out a course of study in which reading and practical work in the pharmacy are carefully arranged, so as to form a continuous curriculum throughout apprenticeship. The advice and guidance of the employer should be sought in this, and when once a course of study has been mapped out it should be rigidly adhered to. In the majority of cases the student will be within reach of a technical school, and classes in chemistry, physics, and botany are available at most of these institutions. In many cases such schools provide special courses for students of pharmacy, including classes in dispensing and materia medica. The apprentice should take full advantage of such facilities as exist in his neighbourhood, but if he is unable to attend a technical school by reason of distance, etc., he will be able to accomplish much useful work by private study if he brings a little enthusiasm to bear upon it and can obtain some help and guidance from his employer.

On the completion of apprenticeship the student should obtain a situation as junior assistant in a good dispensing business to gain further experience and to acquire expertness in the carrying-out of pharmaceutical operations, which will stand him in good stead in the examination-room and, indeed, throughout the whole of his career. During this period he will naturally extend his knowledge of business methods and salesmanship, the value of which will be inestimable when he settles down in business on his own account. It must be borne in mind that the successful pharmacist of modern times must be a thorough business man as well as a competent pharmacist. The following are suitable books for

Botany.

"Elementary Botany," Edmonds (Longmans, Green & Co.). 2*s*. 6*d*.

"Text-book of Botany," Amy Johnson (Allman), 7*s*. 6*d*.

"Structural Botany": Part 1, "Flowering Plants"; Part 2, "Flowerless Plants," D. H. Scott (Black), each 3*s*. 6*d*.

"Botanists' Pocket Book," Hayward, revised by G. C. Druce (Bell), 4*s*. 6*d*.

"Practical Botany for Beginners," Bower and Gwynne-Vaughan (Macmillan), 3*s*. 6*d*.

Theoretical Chemistry.

"Elementary Inorganic Chemistry," James Walker (Macmillan), 3*s*. 6*d*. (suitable for beginners).

"Text-book of Inorganic Chemistry," Senter (Methuen), 6*s*. 6*d*.

"Modern Inorganic Chemistry," Mellor (Longmans, Green & Co.), 7*s*. 6*d*.

"Theoretical Organic Chemistry," Cohen (Macmillan), 6*s*.

Practical Chemistry.

"Short Manual of Analytical Chemistry," Muter (Baillière, Tindall & Cox), 6*s*.

"Qualitative Chemical Analysis, Organic and Inorganic," F. Mollwo Perkin (Longmans, Green & Co.), 4*s*.

Pharmaceutical Latin and Prescription-reading.

"Latin Grammar of Pharmacy," Joseph Ince (Baillière, Tindall & Cox), 5*s*.

"Medical and Pharmaceutical Latin for Students of Pharmacy and Medicine," R. R. Bennett (Churchill), 6*s*.

Materia Medica.

"A Text-book of Materia Medica," Greenish (Churchill), 15*s*.

"Materia Medica," Southall, revised by E. W. Mann (Churchill), 7*s*. 6*d*.

Pharmacy.

"British Pharmacopœia" (Constable & Co., Ltd.), 10*s*. 6*d*.

"Practical Pharmacy," Lucas (Churchill), 12*s*. 6*d*.

"The Art of Dispensing," MacEwan (*C. & D.* Office), 6*s*.

Minor or Qualifying Examination.

The following is an epitome of the official syllabus:

Subjects of the Examination.

Botany.—(*a*) *Classification.*—The main divisions of the vegetable kingdom—viz., Thallophyta, Bryophyta, Pteridophyta, Gymnosperms, and Angiosperms, and their chief distinguishing features; the classes and sub-classes of the Angiosperms, and the description of flowering plants in technical language. A list of about fifty British plants is given for recognition. (*b*) *Morphology (including Anatomy).*—The external forms of plants, homology and analogy; buds, branching and branch systems, leaves and their arrangement on the stem, the inflorescence, flower, and fruit; a general acquaintance with the anatomy of plants, and recognition of sections by the aid of the microscope. (*c*) *The elementary facts* connected with the physiology of plants, and the nature of the chief plant constituents; the manner in which plants grow and the effect of external stimuli upon them; sexual and asexual reproduction.

Chemistry and Physics.—An elementary knowledge of: (*a*) The physical laws (including simple problems relating to the weight and volume, under different conditions of temperature and pressure, of elements and compounds concerned in chemical reactions). (*b*) Elements and compounds; the chief characteristics of chemical action; chemical combination; atomic and molecular weights; chemical formulæ, nomenclature, and notation; valency; the difference between metals and non-metals. (*c*) The non-metals, their general characters, preparation, and the typical reactions of non-metallic elements and their compounds, and the impurities of such of them as are used in pharmacy. (*d*) The metals, their isolation; the methods of preparation and properties of oxides and salts; the adulterations and impurities of the official salts. (*e*) Carbon compounds of importance in pharmacy, the methods of preparation and their mutual relationships; the detection and estimation of elements in organic compounds, and the determination of molecular formulæ. *Practical Examination.*—Determination of specific gravities; use of the thermometer and barometer; recognition of the more important elements and compounds by tests; qualitative analysis of a mixture containing not more than two basic radicles and two acidic radicles; the identification of certain organic compounds; volumetric determinations described in the British Pharmacopœia; the use of the balance and the imperial and metric systems of weights and measures; the assay processes of the British Pharmacopœia; the preparation of certain official inorganic and organic compounds.

Materia Medica.—Recognition of the crude drugs of the British Pharmacopœia and in the list given in the syllabus, their botanical and geographical sources, natural orders, commercial varieties, methods of collection and preparation for the market, morphological nature, chief active constituents and their nature and percentage usually present; also a practical knowledge of the pharmacopœial tests and assay processes applied to crude drugs or their official products.

Pharmacy.—(*a*) Operations requiring the use of heat. (*b*) Disintegration of solid substances; the nature of solution, the solvent power of various liquids, and the influence of specified conditions; the processes by which the official preparations are made; and the proportion of active ingredient or crude drug in the more potent of the official preparations. (*c*) The principles involved in the dispensing of medicines. (*d*) A knowledge of the law as regards the sale (by retail and wholesale) of scheduled poisons and of the schedule itself, the dispensing of poisons, and the regulations for the sale of arsenic. *Practical Pharmacy and Dispensing* includes the making of pharmacopœial preparations and the compounding and dispensing of medicines (B.P. 1914).

Pharmaceutical Latin and Prescriptions.—The reading of autograph prescriptions in English or Latin, and rendering into good Latin prescriptions written in English; a knowledge of posology and pharmaceutical calculations.

A copy of the complete syllabus can be got from the Secretary at 16 Bloomsbury Square, London, W.C., but every student should also get a copy of "Minor Experiences," published by the *C. & D.* at 2*s.* 6*d.*, by post 2*s.* 9*d.*; the examination is practical and oral, but the book contains accounts of it by more than fifty who have passed the examination. The point that we want to emphasise now is that the examination is one that every person should be working for from the day he enters a chemist's shop. The Council of the Pharmaceutical Society recommends that all candidates for the examination should receive a systematic course of instruction occupying a period of at least six months, including at least sixty lectures in chemistry, eighteen hours' work per week in practical chemistry, forty-five lectures and demonstrations in botany, and twenty-five lectures and demonstrations in materia medica. This course, or something like it, is taken by practically everybody nowadays, and the man who has worked regularly at his books during his business-days benefits enormously and is better able to take in the school-work after. The examination is conducted by the Board of Examiners for England and Wales (meeting in London) and the Board for Scotland (meeting in Edinburgh). The examinations are practical and oral, and are held in January, April, July, and at the end of September or the beginning of October. Each candidate must give notice and pay the fee of ten guineas to the Registrar, 17 Bloomsbury Square, London, on or before the 15th day of the month previous to that in which the examination is held. When giving notice for the first time the candidate must have attained the full age of twenty-one years, and is required to produce a registrar's certificate of birth, and the certified declaration that for three years he has been practically engaged in translation and dispensing of prescriptions. A form should be obtained from the Registrar. The examination extends over two days, the practical portion of the chemistry and pharmacy and dispensing being taken on the first day. If the candidate is unsuccessful in these subjects, he or she is not called upon to attend the second part of the examination. If successful in the practical work, the candidate is notified of the date of the oral examination in the rest of the subjects.

The Major Examination.

This examination for the title "pharmaceutical chemist" is open to all candidates who have passed the Minor examination; fee 3*l.* 3*s.* Examinations are held in April and July only, in Edinburgh and London, and candidates must enter not later than the 15th of the preceding month. The examination extends over three days, and includes chemistry, physics, materia medica and pharmaceutics, and botany of a more advanced type than that of the Minor. The examination is in writing, and includes practical work in chemistry, botany, and materia medica. Heat and light, electricity and magnetism, taxonomy, the detection of adulterants in entire and powdered drugs by the microscope, gravimetric analysis, gasometric analysis, alkaloidal assays, and the chemistry of carbon compounds are the chief subjects. The examination should be taken soon after passing the Minor, as the syllabus is largely an extension of Minor work.

Pharmaceutical Education.

We group here in as concise a manner as possible particulars as to where courses of instruction in the subjects of the Minor examination are given. Students should consider well which educational establishment is likely to suit them. In the larger cities the Minor student will usually find a place to suit him, but frequently one's parents, especially when they are connected with pharmacy, make choice of such an historic place as "the Square." We confine our information to matters about the courses, fees, and the like. Those who want further information should procure a prospectus from the Principal or Secretary.

Aberdeen.

Robert Gordon's Technical College.—Mr. Gilbert Simpson, Ph.C., School of Pharmacy Teacher. Short course begins August 28, 1916; fee, 3*l.* 3*s.*, or 8*l.* 8*s.* with succeeding term. Ordinary terms commence on October 4, January 8, and April 4; fees, 7*l.* 7*s.*, and 6*l.* 6*s.* per term after the first. Major practical work, 3*l.* 3*s.* per term. Evening classes (Mondays, Tuesdays, and Thursdays) begin on October 2; fees, 10*s.* 6*d.* to 1*l.* 1*s.* per subject.

Bath.

Bath and West of England College of Chemistry and Pharmacy, 6 Cleveland Place East, Bath.—Principal: Mr. David J. Williams, Ph.C., F.C.S. Minor foundation course, September 6; fee, 9*l.* 9*s.* Rapid revision course, January or April term, 8*l.* 8*s.* For October examinations, August 21; fee, 5*l.* 5*s.* Evening classes, 1*l.* 1*s.* to 2*l.* 10*s.* 6*d.* Major course, three months 7*l.* 7*s.*, six months 13*l.* 13*s.* Apothecaries' Assistants' course, six months 9*l.* 9*s.*, three months 5*l.* 5*s.* New course commences on August 21. Postal instruction given.

Birmingham.

Birmingham and Midland College of Chemistry, Pharmacy, and Botany, 45 Newhall Street, Birmingham.—Principal: Mr. G. L. Scott; Ph.C. Courses for the Minor start on October 5 and early in January, April, and July; fees, three months 8*l.* 8*s.*, six months 15*l.* 15*s.*, nine months 21*l.* A short course for the October Minor begins on August 21. Afternoon and evening classes are also held. Instruction is also provided for the Major and for the Apothecaries' Hall examination.

Municipal Technical School, Suffolk Street, Birmingham.—Principal: Dr. W. E. Sumpner, M.Inst.E.E. Pharmacy class, Wednesdays, 2.30 to 5.30 p.m.; fee 5*s.* per session first year 7*s.* 6*d.* second, and 10*s.* for the third. Secretary: Geo. Mellor.

Blackburn.

Technical School.—Principal: Mr. R. H. Pickard. Two-years' day course in chemistry, physics, and botany for pharmacy students specially, also evening classes.

Bradford.

Technical College.—Principal: Professor W. M. Gardner, M.Sc., F.I.C. Minor course of three terms (day), materia medica, pharmacy, and botany; lectures in evening class also. Fees, 5*l.* 10*s.* (day course) and 21*s.* (evening course). Apothecaries' Assistants' examination also provided for.

Brighton.

Technical College.—Principal: Dr. W. Beckit Burnie. Day and evening classes in Minor subjects. Fees, 5*s.* to 7*s.* 6*d.* per subject.

Bristol.

University.—Chemistry, botany, pharmacy, and materia medica by Dr. O. C. M. Davis, Ph.C., F.I.C., and other teachers. Registrar: Mr. James Rafter, M.A.

Merchant Venturers' Technical College.—Minor classes on Monday, Tuesday, and Friday evenings, commencing September 25. Fees, 10*s.* per class.

Derby.

Technical College—Principal: Mr. F. W. Shurlock, B.A., B.Sc. Mr. S. Taylor, Ph.C., teaches pharmacy and materia medica on Wednesdays; fee, 1*l.* 1*s.* per term. Chemistry and botany classes also.

Dundee.

Technical and University Colleges.—All science subjects, including chemistry and botany for pharmacy students.

Edinburgh.

Central School of Pharmacy, 26 Clyde Street, Edinburgh.—Principal: Mr. W. Beaverley Cowie, Ph.C., F.C.S., assisted by Mr. A. A. W. Cuthbertson, Ph.C. Full courses of instruction for the Minor examination begin early in October, January, and April; fee, 8*l.* 8*s.* per term. A short revision course commences in the middle of August. Evening classes are also held; fee, 3*l.* 3*s.* per term. Tuition for the Major examination can be arranged.

Heriot-Watt College, Chambers Street, Edinburgh.—Principal: Dr. A. P. Laurie, M.A., F.I.C. Pharmaceutics lectures by Mr. William Duncan, Ph.C., F.C.S., on Tuesday evenings; fee, 5*s.* Chemistry, botany, and other science subjects; fees, 5*s.* to 1*l.* 1*s.*

Royal Dispensary and School of Pharmacy, 21 West Richmond Street, Edinburgh.—Principal: Mr. W. Duncan, Ph.C., F.C.S., assisted by Mr. W. G. Mackenzie, Ph.C. Session opens October 4, and other Minor courses in January and April; fee, 8*l.* 8*s.* per term. Evening classes Mondays, Thursdays, and Fridays from October 4; fee, 3*l.* 3*s.* for three months.

Exeter.

Exeter University College.—Evening classes in pharmacy and materia medica are available. Fee, 1*l.* 1*s.* per term.

Glasgow.

School of Pharmacy, 180 West Regent Street, Glasgow.—Principal: Mr. M. M. Irvine, Ph.C., D.B.O.A. Three months' Minor courses begin on October 4, and a short summer course on August 16. Evening course commences on October 2 for two years.

Huddersfield.

Technical College.—Minor course includes instruction in pharmacy and materia medica by Mr. J. B. Broadbent, Ph.C., on Tuesday afternoons; fee, 6*l.* 6*s.* per annum. Evening classes (chemistry, botany, and physics), 15*s.* 6*d.*; afternoon pharmacy, 25*s.*

Hull.

Municipal Technical College, Park Street, Hull.—Chemistry Department by Mr. Geo. E. Johnson, B.Sc., F.I.C. Evening and day classes in chemistry. Evening fees, 5*s.* to 10*s.*; day by arrangement.

Leeds.

Central Technical School.—Principal: Mr. R. E. Barnett, B.Sc. Minor course (three evenings per week) begins September 25; fee, 3*l.* per session. Preparatory course, 15*s.* per session. Preliminary examination classes at the Central School of Commerce, Woodhouse Lane; fee, 30*s.* per session. A day course for women assistants has been arranged jointly with the Leeds Public Dispensary Board.

College of Pharmacy.—Principal: Mr. F. Pilkington Sargeant, Ph.C., F.C.S. Minor courses October 17. Separate classes for ladies.

Leicester.

Municipal Technical School.—Minor course covers three years. Apprentices' Preliminary day courses also.

Liverpool.

School of Pharmacy, 18 Colquitt Street, Liverpool.—Principal: Mr. H. Humphreys Jones, Ph.C., F.C.S. Revision class for October Minor starts August 16; fee, 4*l.* 14*s.* 6*d.* Full Minor courses commence September, January, and April; fees, three months 9*l.* 9*s.*, six months 15*l.* 15*s.* Apothecaries' Assistants' examination course August 16. Tuesday and Wednesday part-time classes (3 p.m. to 10 p.m.) begin September 12 and 13.

London.

School of Pharmacy, 17 Bloomsbury Square, London, W.C.—The staff includes: Mr. C. H. Warner, B.Sc., F.I.C., Lecturer in Botany; Professor Henry L. Smith, B.Sc., F.I.C., Chemistry and Physics; and Professor Henry G. Greenish, F.I.C., F.L.S., Pharmaceutics. Session begins October 4. Minor course until the end of June 1917; fee, 32*l.* 11*s.*, or 30*l.* to student-associates. Additional term, 6*l.* 6*s.* Major course ends March 1917; fee, 18*l.* 18*s.*, or 18*l.* to members of the Society. Summer term for students who have completed the advanced course, 4*l.* 4*s.* Shorter courses by special arrangement at appropriate fees. Dean: Professor Greenish.

London College of Chemistry and Pharmacy, 361 Clapham Road, London, S.W.—Principal: Mr. Henry Wootton, B.Sc. Revision course for October Minor begins on August 16; fee, 5*l.* 5*s.* Other Minor courses, September 15 to Christmas; fee, 10*l.* 10*s.* Other three-months' courses begin in January and April; fee, 9*l.* 19*s.* 6*d.* Major course, six months, begins in October, fee 13*l.* 2*s.* 6*d.*; or three-month terms, January to April or April to July, 6*l.* 16*s.* 6*d.* Evening classes (fees, 1*l.* 1*s.* to 1*l.* 17*s.* 6*d.*) are also held. Apothecaries' Assistants' course commences on August 18 and in October, January, and April; fee (six months), 10*l.* 10*s.*, three-month term 5*l.* 15*s.* 6*d.* Separate classrooms and museum for ladies.

South of England College of Pharmacy, 186 Clapham Road, London, S.W.—Principal: Mr. H. Lucas, Ph.C., F.C.S. Minor courses (three months) commence on September 2, January 1, and April 1; fee, 9*l.* 9*s.*, or two terms for 17*l.* 6*s.* 6*d.* A special course, suitable for ladies wishing to qualify as dispensers, begins on September 28; fees, 5*l.* 15*s.* 6*d.* to 10*l.* 10*s.* Tutorial class for October Minor begins August 14; fee, 5*l.* 15*s.* 6*d.* Evening (Minor and Major) classes on Mondays, Wednesdays, and Thursdays, 6.30 to 9 p.m., from October 2 to July; fees, Minor 8*l.* 18*s.* 6*d.*, Major 8*l.* 8*s.* Correspondence tuition from 1*l.* 1*s.*

Westminster College of Chemistry, Pharmacy, and Botany, 402 Clapham Road, London, S.W.—Principal, Mr. G. S. V. Wills, Ph.C., and Mr. P. H. Woodnoth. Terms, September to Christmas, January to April, and April to July. Revision course August to October examination each year can be obtained post free on application. A postal course of instruction for all the Pharmaceutical examinations is also conducted.

Misses M. E. Buchanan and S. J. Heywood, Gordon Hall, Gordon Square, London, W.C., are pharmaceutical chemists who, as women, are specially versed in the requirements of those of their sex who need training in the subjects of the Pharmaceutical examinations or in dispensing. Individual coaching and short courses of dispensing, chemistry, and materia medica can be arranged. Apply by letter for particulars. Interviews by appointment.

Elt's College, North Finchley, London, N.—Principal: Mr. E. E. Elt, B.Sc. Minor, Major, Apothecaries' Hall, and Preliminary examination courses in day and evening classes. Postal tuition also, which may be combined with practical work at the College. The day classes reopen on August 29 and evening classes on September 28.

Battersea Polytechnic, Battersea Park Road, S.W.—Complete day and evening courses in chemistry, botany, physics, etc. Evening courses in pharmacy, dispensing, materia medica, botany, chemistry, and physics for the examinations of the Pharmaceutical Society, the Conjoint Board, and the Apothecaries' Hall. Session commences September 25. There are also special evening classes in bacteriology, food and drug analysis, oils, fats, and soaps, and "recognised" London B.Sc. courses. Fees range from 1*l.* 5*s.* to 13*l.* 13*s.* per session for day students and from 5*s.* to 12*s.* 6*d.* per session for evening classes.

City of London College, White Street, Moorfields, London, E.C.—Chemistry classes suitable for the Minor examination on Tuesday, Wednesday, and Friday evenings. Sessional fee from 15*s.* to 30*s.* for each class. Write to Mr. David Savage, Secretary.

West Ham Municipal Technical Institute.—Principal: Dr. J. R. Airey. Course in pharmaceutical subjects; fee, 25*s.*

South-Western Polytechnic Institute, Manresa Road, Chelsea, S.W.—Courses (day and evening) for the Minor, Major, and Apothecaries' Hall commence on September 25. The courses cover two years, but students with a good fundamental training may complete their studies in one session. Sessional fees: Minor or Major, day, 7*l.* 10*s.*; evening, 1*l.* 5*s.*; Apothecaries' Hall, day 9*l.*, evening 1*l.* 5*s.* The Head of the Chemical Department will advise students as to the suitable courses of study also for post-graduate students (see p. 60). Full particulars may be obtained from the Secretary of the Institute (Room 73).

Manchester.

University of Manchester.—The Minor and Major courses in the Pharmaceutical Department commence in October and extend over six or nine months, the composition-fees being 15*l.* 15*s.* and 19*l.* 19*s.* respectively. Students with previous adequate knowledge of science subjects can arrange to attend one whole day each week. The complete two-years' part-time course for the Minor examination is given partly at the Municipal School of Technology and partly at the University. Degree courses in pharmacy are available here; average cost per session, 20*l.* to 25*l.* Mr. James Grier, M.Sc., Ph.C., is the pharmacy instructor. A three-months' course in bacteriology is also available for Major students; fee, 2*l.* 2*s.*

Municipal School of Technology, Sackville Street, Manchester.—Two-year course for the Minor examination will be held on Wednesday afternoons and evenings in the School of Technology and Owens College, completing with a short course (whole-time) at Owens College, *either* during the six winter months or from the middle of April to the middle of July. For prospectus apply to the Registrar of the Municipal School.

Manchester College of Pharmacy, 292 Oxford Road.—Principals: Mr. Harry Brindle, Ph.C., F.C.S., and Mr. Charles Turner, Ph.C., F.C.S. Minor classes (full time) commence on August 14 and October 2; part-time classes, Tuesday, August 29, and Wednesday August 30. New terms commence in first weeks of January and April. Major classes on same dates. Two special ladies' classes for the Apothecaries' Hall examination.

Northern College of Pharmacy, 100 and 102 Burlington Street, Manchester.—Principal: Mr. E. G. Bryant, Ph.C., F.C.S. Short Minor revision course begins on August 21; four-month Minor, September 3; fee, 10*l.* 10*s.* Three-month courses start in October, January, and April; fee, 9*l.* 9*s.* Afternoon, once-a-week, and evening courses also commence in September and January; fees, 2*l.* 10*s.* to 4*l.* 4*s.* Major courses are also provided. Miss E. Rose, M.P.S., superintends a ladies' course for the Apothecaries' Assistants' examination. Correspondence tuition for all examinations begins on August 24.

Nottingham.

University College.—Evening courses preparing for the Minor examination cost 7*s.* 6*d.* first year, 12*s.* 6*d.* second year, 40*s.* third and fourth years. Course for women dispensers; fee, 3*l.* per term. Acting Registrar: Mr. J. E. Shimeld.

Plymouth.

Municipal Science Schools.—Principal: Mr. W. S. Templeton, M.A., B.Sc. Day course in chemistry and dispensing; fee, 4*l.* 10*s.* per session; dispensing, 1*l.* per term, or 2*l.* per session. Evening pharmaceutical courses in chemistry and botany; fee, 10*s.* per session.

Portsmouth.

Municipal College.—Principal: Mr. Oliver Freeman, B.Sc., A.R.C.S. Pharmaceutical courses (day and evening) in the subjects for the Minor (two years) and Major (three years).

Salford.

Royal Technical Institute.—Special day courses in chemistry and physics are arranged for pharmaceutical students on the lines proposed by the Pharmaceutical Society. Information with regard to these courses may be obtained from the Principal of the Institute.

Sheffield.

Central Secondary Schools.—Principal: Mr. J. W. Iliffe, M.A. Pharmaceutical course (evening) extending over three years, with Mr. E. Preston, Ph.C., as instructor in pharmacy and materia medica. Fees, 4*s.* to 15*s.* 6*d.* Classes in botany, chemistry, Latin, and other subjects are held.

Southampton.

University College.—Minor and Major courses from October to June; fee, 16*l.* Apothecaries' Assistants' examination; fee, 12*l.* Evening classes in chemistry, botany, and physics suitable for pharmaceutical students; fees, 5*s.* to 10*s.* per subject. See "Prospectus of Courses for Pharmaceutical Students," to be obtained from the Registrar.

Wolverhampton.

Municipal Science and Technical School.—Three-year course for the Minor examination commences on September 13; fees, 7*s.* per session.

Apothecaries' Assistants' Certificates.

Women's labour is much wanted at present, and most of those who want to become "chemists" are content to get the Assistants' certificate offered by the Society of Apothecaries, Water Lane, Blackfriars, London, E.C. The certificate, which entitles them to act as assistants to apothecaries who are licentiates of the Society, is obtained on the following conditions:

(*a*) The candidate (male or female) must be at least nineteen years of age.

(*b*) A certificate of sound general education must be produced.

(*c*) A certificate signed by an apothecary's assistant holding a public appointment, a registered chemist and druggist, or a registered medical practitioner, showing that special instruction in practical pharmacy has been taken for six months.

(*d*) The candidate must pass an examination in (1) compounding and dispensing medicines, (2) chemistry, (3) materia medica and pharmacy, and (4) prescription-reading.

Particulars can be obtained from Mr. Frank Haydon, L.R.C.P., Secretary to the Court of Examiners, The Apothecaries' Hall, Blackfriars, London, E.C.

Ireland.

Until the Pharmacy Act (Ireland), 1875, the dispensing of medical prescriptions was restricted to apothecaries and medical practitioners. The principal effect of the 1875 Act was to authorise those registered under it to do this dispensing also; further it restricted the sale of poisons to such persons and others who previously had the right. By an amending Act of 1890 the sale of poisons by retail was extended to a class of non-dispensers. Under the 1875 Act the persons registered are pharmaceutical chemists, and under the 1890 Act registered druggists; those who were in business when the Act passed are designated chemists and druggists. A qualification for Assistants to pharmaceutical chemists was also created by the 1890 Act, these being entitled to transact the business in the temporary absence of their employers. The examination and registration body is the Pharmaceutical Society of Ireland, 67 Lower Mount Street, Dublin, whose Secretary and Registrar is Mr. A. T. Ferrall.

The Title "Pharmaceutical Chemist."

We have already mentioned (p. 49) that a Preliminary examination is conducted by the Society. Another examination (the Licence) has also to be passed, and the conditions to be fulfilled by candidates are as follows:

(*a*) After passing a Preliminary examination, and being registered as an apprentice, the person must serve four years as apprentice or assistant with, and in the sole employment of, a pharmaceutical chemist, or a chemist and druggist of Great Britain, or an apothecary, or a firm of legally qualified pharmaceutical chemists, chemists and druggists of Great Britain, or apothecaries, *in an open shop*, and the candidate must spend the business day with his employer. (Provision is made for service with more than one employer, and, for those who have served four years with a chemist and druggist or registered druggist in Ireland, two years' further service with a pharmaceutical chemist or an apothecary suffices.)

(*b*) Attend three-months' courses of lectures in theoretical chemistry and in botany and materia medica, and a three-months' course of practical chemistry (after the lectures in theory) at one or other of the following approved institutions:

Pharmaceutical Society of Ireland, School of Chemistry; School of the Pharmaceutical Society of Great Britain; Cecilia Street School of Medicine, Dublin; City of Dublin Technical Schools; Government School of Science, South Kensington; Queen's University, Belfast; Queen's College, Galway; Royal College of Science for Ireland, Dublin; Royal College of Surgeons in Ireland, Dublin; School of Physic, Trinity College, Dublin; The Anderson College of Medicine, Glasgow; Royal Academic Institution, Belfast; The Municipal Technical Institute, Belfast; Mr. Templeton's School of Scientific Method and Chemistry, Belfast; Crawford Municipal Technical Institute, Cork. (Some of these are approved for all the subjects.)

(*c*) The person must be twenty-one years of age.

(*d*) Declarations and certificates of the foregoing must be lodged with the Registrar when the candidate applies for entry to the Licence examination.

The examination commences on the second Wednesdays of January, April, July, and October, at 11 A.M., and is held at 67 Lower Mount Street, Dublin. Candidates must give notice of intention to attend to the Registrar fourteen clear days before the date of the examination, and this must be accompanied by a receipt of having paid 5*l*. 5*s*. into the Bank of Ireland to the credit of the Society. The necessary forms should be procured from Mr. Ferrall well in advance.

Subjects of the Licence examination:

Botany: Recognition of the principal indigenous plants used in medicine, their natural orders, and the characters of their several parts.

Materia Medica: Recognition of B.P. drugs; their characters, active principles, sources, official preparations, and adulterations.

Chemistry: Elementary laws of chemistry and physics, including equations. Recognition of B.P. chemicals, the processes by which they are obtained, qualitative analysis (including B.P. tests) and volumetric analysis, and a practical examination in these subjects. (The Council recommends Corbyn and Stewart's "Physics and Chemistry.")

Practical Pharmacy: Translation of Latin prescriptions, detection of dangerous doses, and compounding and dispensing. Processes of making and recognition of B.P. non-chemical preparations, and an intimate knowledge of the Sale of Poisons (Ireland) Act.

The examination is written, practical, and oral. Minimum pass percentage in pharmacy is 50, and in botany, materia medica, and chemistry 40 each, with 55 per cent. in the aggregate. Honours are given to candidates who take 70 per cent. of the total marks, with not less than 50 per cent. in any subject.

The Examination for Assistants to pharmaceutical chemists is held quarterly on the Saturdays following the Licence examination, so as to meet the convenience of those who fail in it. Fee, 1*l*. 1*s*. The subjects are prescription-reading and translation, including the detection of unusual doses, practical dispensing, materia medica, pharmacy, including recognition of non-chemical pharmacopœial preparations and a knowledge of the proportions of active ingredients in these, and the laws relating to the sale of poisons in Ireland.

Registered Druggists' Examination.

The subjects of this examination are prescribed by the Pharmacy Act, 1890, in the following terms:

English orthography and composition.

Arithmetic and the weights and measures of the British Pharmacopœia.

The appearance and properties of the various drugs and chemicals in general use.

The Sale of Poisons (Ireland) Act.

The examination is open to anyone who has served as an assistant or apprentice for not less than four years to a pharmaceutical chemist, chemist and druggist, registered druggist, or licentiate apothecary keeping open shop. It is held in Dublin and Belfast (if twelve candidates apply) on the second Tuesdays of January, April, July, and October. Applications for admission, accompanied by the necessary declarations of service and a receipt for 4*l*. 4*s*. (examination-fee 2*l*. 2*s*. and registration-fee 2*l*. 2*s*.) placed to the credit of the Society in the Bank of Ireland, must be received by the Registrar at least fourteen days before the dates of the examinations.

Re-examination Fees.—Pharmaceutical Licence examination, 2*l*. 2*s*.; Assistants' examination, 10*s*. 6*d*.; Registered Druggist examination, 10*s*. 6*d*.

For the examination questions see the Calendar of the Society (2*s*. 9*d*. post free from the Registrar).

Apothecaries' Assistants.—The Apothecaries' Hall of Ireland, 40 St. Mary Street, Dublin, holds an examination for a similar certificate to the London one on the first Friday of each month except August. The subjects of the examination are pharmaceutical and general chemistry, materia medica, pharmacy (practical and theoretical), antidotes to poisons, and the imperial and metric systems of weights and measures. Candidates must be eighteen years of age, and must submit certificates of (*a*) age and (*b*) service of at least one year at pharmacy under the superintendence of a medical practitioner or a pharmaceutical chemist. Notice of intention to attend must be given on the recognised form (obtainable from the Registrar) at least seven days prior to the examination, with the fee of 4*l*. 4*s*. (re-examination, 2*l*. 2*s*.).

Educational Institutions.

Pharmaceutical Society's Schools, 67 Lower Mount Street, Dublin.—Directors: Chemistry School, Professors G. Brownlee, B.Sc., and W. McLean, B.A., B.Sc. Botany and Materia Medica School, Dr. T. Mather Thompson and Mr. Patrick O'Connor, A.R.C.Sci.I. The sessions (three) commence on the first day in October, January, and April. The fees for courses to meet the Society's regulations are: Theoretical chemistry (three months), 1*l*. 1*s*.; practical chemistry (six months), 6*l*. 6*s*.; practice course (three months), past students 2*l*. 2*s*., students of other schools 3*l*. 3*s*.; botany and materia medica (three months), 2*l*. 2*s*. The theoretical chemistry class is held on Tuesday and Thursday evenings, and the practical chemistry class on Monday, Wednesday, and Friday evenings. A day class for practical chemistry (three months) begins in April, fee 6*l*. 6*s*.; also a day practice course. The botany and materia medica classes are held on Tuesday and Thursday evenings with occasional Saturday demonstrations. The chemistry and materia medica courses are recognised by the Royal Colleges of Physicians and Surgeons in Ireland.

Belfast Municipal Technical Institute.—The Pharmaceutical Section of the Pure and Applied Chemistry Department provides full courses in evening classes, also in pharmacy. Fees, 5*s*. to 10*s*. per subject per session.

School of Scientific Method and Chemistry, The Gables, Botanic Avenue, Belfast.—Principal: Mr. S. Templeton, A.R.C.S., F.I.C. The fees are: Theoretical chemistry, 1*l*. 1*s*.; practical chemistry, 4*l*. 4*s*.; botany, 1*l*. 1*s*.; and materia medica, 1*l*. 1*s*. Instruction in pharmacy is also given. The new terms begin on September 4 and January 1. Revision courses and classes for the Pharmaceutical Assistants' and Registered Druggists' examinations are also held.

Scholarships, Prizes, and Apprenticeships.

We now give concise particulars of other matters of interest to pharmacy students and those who have passed the statutory examinations. Those desiring further information should write to the appropriate address.

Aberdeen Pharmaceutical Association.—Prizes are offered to students attending the evening pharmacy classes at Robert Gordon's Technical College. Secretary, Mr. M. K. Watt, 28 Esslemont Avenue, Aberdeen.

Clayton Scholarship.—Awarded to students of the Northern College, Manchester, who have completed there a year's part-time classes. The scholarship entitles the holder to free tuition at the College from September to Christmas, and to 1*l*. worth of books. Mr. E. G. Bryant, F.C.S., 100 and 102 Burlington Street, Manchester, will furnish particulars.

Corner for Students.—This is inserted in The Chemist and Druggist monthly, and consists of qualitative chemical analyses of "salts" provided by Dr. Leonard Dobbin, and reported on by him. Two book prizes are awarded monthly. A tournament is conducted throughout the winter session, the marks each month being registered, and the three competitors who receive the highest number are awarded parchment certificates and book prizes to the value of 2*l*. 2*s*., 1*l*. 1*s*., and 10*s*. 6*d*. Students of pharmacy who want to get the "salts" should send to the

"Corner for Students," The Chemist and Druggist, 42 Cannon Street, London, E.C., stamped and addressed envelopes at the time announced.

Edinburgh Chemists', Assistants', and Apprentices' Association.—Book prizes in four departments, and another for solutions of dispensing problems, are offered for competition among members. For particulars apply to the Hon. Secretary, Mr. Arthur Cairns, 16 Comely Bank Place, Edinburgh.

Fairchild Scholarship and Prizes.—One scholarship of 50*l.* and four prizes of 5*l.* each are awarded annually by Fairchild Bros. & Foster, New York and London, for whom a Committee of Trustees acts along with the Secretary. The competition is open to any registered student of pharmacy in the United Kingdom between the ages of twenty and twenty-two who has fulfilled the conditions of entry for the Minor examination of the Pharmaceutical Society of Great Britain or the Licence examination of the Pharmaceutical Society of Ireland. The examination comprises written papers in elementary chemistry, elementary materia medica, practical pharmacy and prescription-readiug, and elementary business knowledge. The candidate obtaining the highest aggregate number of marks is awarded the scholarship, and out of it he must pay school-fees for not less than three months at any scholastic institution he may select to enable him to prepare for the Minor examination of Great Britain or the Licence examination of Ireland. Any of the money not used in this manner is paid to the student for maintenance. The prizes of 5*l.* are awarded to the best students in England, Wales, Scotland, and Ireland. Full particulars may be obtained from the Secretary, Mr. A. E. Holden, Albert Chambers, 64 and 65 Holborn Viaduct, London, E.C., with whom entries must be made for the next examination by June 1, 1917. The candidates may be examined at any of the following centres, return fare being paid for the centres nearest to which they reside: Cardiff, Dublin, Edinburgh, London, and Manchester.

Charles James Hewlett Memorial Exhibition of 15*l.* is awarded on the recommendation of the Professors of the School of Pharmacy, Bloomsbury, to the student (other than a Bell scholar) who most distinguishes himself during attendance at the elementary (Minor) course. The exhibition pays the fees for the Major course.

Pharmaceutical Society of Great Britain, 17 Bloomsbury Square, London, W.C.—Student-associates may compete for a silver medal, a bronze medal, and certificates of honour for a *herbarium* of British plants collected in any part of the United Kingdom, the Channel Islands, or the Isle of Man between January 1 in one year and July 1 in the year following. No collection may contain more than 150 specimens selected and mounted to display the characteristic features of the more prominent and typical genera of the chief British natural orders.—*Two Jacob Bell Scholarships* are offered annually as a memorial of Jacob Bell. The award comprises free education at the School of Pharmacy and 25*l.* in cash, with books to the value of 2*l.* 10*s.* The scholarships are open only to student-associates of the Society not less than twenty or more than twenty-two years of age who have been engaged for not less than three years in the pharmacy (*i.e.*, open shop) of a pharmaceutical chemist or a chemist and druggist. The examination (subjects, Latin, French or German, chemistry, pharmacy, and botany) is held on the third Tuesday in June at London, Edinburgh, and Manchester. Application for admission must be made on or before June 1 to the Secretary.—The *Manchester Pharmaceutical Association Scholarship*, annual value 34*l.*, is open to student-associates who have been engaged for not less than three years in the pharmacy of a pharmaceutical chemist or a chemist and druggist in Lancashire, Cheshire, or the High Peak Parliamentary Division of Derbyshire. Conditions otherwise like the Bell.—The Society also offers annually three medals for competition by *pharmaceutical chemists* who have passed the Major examination during the year. The competitive examination is in materia medica, botany, and chemistry, and is held shortly after the Major examination in April. The Registrar informs each person entitled to compete. The first prize is the *Pereira Silver Medal* and 5*l.* worth of books; second, the Society's Silver Medal; and third, the Society's Bronze Medal.—The Society awards the following: The *Redwood Scholarship*, of the value of about 60*l.* in cash, awarded every second year to a pharmaceutical chemist to pursue work in the Society's research laboratory. The *Burroughs Scholarship* of about 50*l.* every second year for a similar purpose. The *Salters' Research Fellowship* in chemistry, of the annual value of 100*l.*, is awarded by the Salters' Company on the Society's nomination.

Pharmaceutical Society of Ireland.—The Council awards annually a gold and a silver medal to pharmaceutical chemists who have passed the Licence examination during the year and obtained the following standard of marks: Gold medal, 240 out of 300 marks, and 65 in each of the three subjects; silver medal, 230 out of 300 marks, and 60 in each of the three subjects.

Dispensorships.

Boards of Guardians.—Poor-law dispensorships under the Local Government Board of England are open to those who hold certificates as Licentiates of the Society of Apothecaries, London; apothecaries' assistants (under the English Act); Army compounders; chemists and druggists (G.B.); or pharmaceutical chemists (Ireland). Salaries begin at 120*l.*, and can be increased by 20*l.* after four years, and then by biennial increments of 10*l.* until a maximum of 180*l.* a year (or under exceptional circumstances 200*l.*) is reached in the metropolitan area. Dispensers receive pensions on retirement through age or ill-health, a deduction from the salaries being made in respect to this arrangement. This applies to London so far as salaries go only, and they have in many cases extras for working *x* rays, etc. Out of the London area any salary (with the consent of the Local Government Board) can be paid, and most towns get over this amount—say, from 250*l.* to 300*l.*, and in some cases a few extras.

Metropolitan Asylums Board.—The salary paid by the Board for the post of dispenser is 120*l.* per annum, rising by annual increments, which commence after four years' service, of 7*l.* 10*s.* per annum to 180*l.* The Clerk to the Board informs us that the Order of the Local Government Board in reference to these appointments states: "No person shall be qualified to be appointed a dispenser unless he shall be a Licentiate of the Apothecaries' Company of London, or shall have been duly registered under the Pharmacy Act, 1868, or any other authority of law in that behalf." Accordingly, Minor and Major qualifications of the Pharmaceutical Society and the L.S.A. diploma (full medical qualification) are accepted; the holders of the Apothecaries' Assistants' certificate only not being eligible.

Naval Hospitals.—Assistant pharmacists must be between twenty-one and twenty-eight years old on appointment, and must have passed the Minor or Major examination (G.B.), or the Licence examination (certificate of competency), Ireland. Entry into the Service is by examination, conducted by the Civil Service Commissioners, but the candidates are first selected by the Director-General of the Medical Department of the Navy, Admiralty, London, S.W. Assistant pharmacists are paid an inclusive salary of 120*l.* per annum on entry, rising by 5*l.* annually to 170*l.* Free quarters are provided, or 35*l.* a year in place of them. Assistant pharmacists are eligible for promotion to the grade of pharmacist (salary 175*l.*; 7*l.* 10*s.* to 250*l.*, with quarters or 35*l.* allowance). Pharmacists may be promoted to Superintending Pharmacist (salary 250*l.*; 10*l.* to 350*l.*, with quarters 35*l.* a year up to 300*l.*, then 50*l.*). Quarters are provided for married men and unmarried (when available). Pensions are granted on retiring.

The establishment of the various grades is as follows:

Four superintending pharmacists (one at Haslar, one at Plymouth, one at Chatham, and one at Deptford).

Six pharmacists (one at each of the hospitals at Haulbowline, Portland, Gibraltar, Malta, Hong-Kong, and Haslar).

Nine assistant pharmacists (three at Haslar, three at Plymouth, and three at Chatham).

Pharmacists serving at stations abroad are paid a further allowance to meet the increased cost of living. Ordinary leave of twenty-eight days, exclusive of Sundays, is granted each year. Sick leave is granted, but not on full pay for more than six months continuously nor for more than twelve calendar months. Three calendar months' notice is required from the appointee.

Army Compounders are non-commissioned officers in the Royal Army Medical Corps. It is undesirable to say anything about the appointments at the present time, because the official conditions of employment and the actual conditions are inconsistent.

Prison Service.—In English and Welsh prisons pharmacists are admitted between twenty-four and forty (1) on passing an examination, conducted by the Civil Service Commission, in reading, writing and orthography, and arithmetic (including arithmetical tables, reduction, practice, and vulgar or decimal fractions); and (2) appointments may be made under Clause 7 of the Order in Council of January 10, 1910, in the case of persons who have passed the Major or the Minor examination of the Pharmaceutical Society. The duties consist of dispensing medicines, assisting in keeping medical records, keeping medical and surgical instruments in order, assisting in the performance of surgical operations, doing the duties of hospital warder when necessary, and keeping the dispensary and its stores. The scale of remuneration begins at 109*l.* 4*s.* per annum, and may rise to 156*l.* with quarters. The Secretary of the Civil Service Commission, Burlington Gardens, London, W., is the person to write to regarding appointments.

Medicine.

Until the Medical Act, 1858, was passed, the practice of medicine and surgery in the United Kingdom was a somewhat haphazard business. The effect of the 1858 Act was to centralise matters by giving the government of education, examination, and registration of qualified persons to the General Medical Council (full title, General Council of Medical Education and Registration of the United Kingdom). Numerous other Acts have been passed bearing upon the subject: for example, it is the Medical Act, 1886, which states the privileges of registered persons, namely:

"On and after the appointed day a registered medical practitioner shall, save as in this Act mentioned, be entitled to practise medicine, surgery, and midwifery in the United Kingdom, and (subject to any local law) in any other part of her Majesty's Dominions, and to recover in due course of law in respect of such practice any expenses, charges in respect of medicaments or other appliances, or any fees to which he may be entitled, unless he is a Fellow of a College of Physicians, the Fellows of which are prohibited by by-law from recovering at law their expenses, charges, or fees, in which case such prohibitory by-law, so long as it is in force, may be pleaded in bar of any legal proceedings instituted by such Fellow for the recovery of expenses, charges, or fees."

The whole British medical law is built round this provision. What we have to do at present is to tell as briefly as possible the educational conditions which have to be fulfilled before a person can be registered as a general medical practitioner and embrace the following provisions as formulated by the General Medical Council:

(1) After attaining the age of sixteen years a person may pass an approved Preliminary examination, and within fifteen days of beginning medical studies he should register as a medical student at either of the following addresses:

The Registrar of the General Medical Council, 44 Hallam Street, Portland Place, London, W.

The Registrar of the Branch Council for Scotland, 54 George Square, Edinburgh.

The Registrar of the Branch Council for Ireland, 35 Dawson Street, Dublin.

(2) The medical studies must be undertaken at a school or schools approved by the General Medical Council, and the curriculum must not be less than five academic years (fifty-seven months) from the date of registration as a medical student.

(3) The student must pass in the course of his education a series of Professional examinations, these being arranged so that they come at the end of the prescribed studies.

All the Universities in the United Kingdom, the Royal Colleges of Physicians and Surgeons in England, Ireland, and Scotland, the Apothecaries' Society of London, and the Apothecaries' Hall, Dublin, are authorised to grant diplomas or degrees in medicine, surgery, and midwifery (three essentials), which enable the holder to be registered as a general medical practitioner, this being done by the General Medical Council at a cost of 5*l*. Provision is also made for the registration in this country of medical practitioners who have qualified professionally in other parts of the Empire, also for the registration of other similar persons who have qualified in foreign countries. The *Regulations* prepared by the General Medical Council, and published at 6*d*., or 7*d*. post free, by Constable & Co., Ltd., 10 Orange Street, Leicester Square, London, W.C., should be obtained by medical students, who should obtain also the prospectus of the medical school at which they propose to study.

At the end of 1915 43,225 medical practitioners were on the Register, and the average annual addition to the Register was 1,284, of whom 660 were registered in England, 456 in Scotland, and 166 in Ireland. These figures are an index to the educational qualification centres. The numbers of persons in practice differ materially—*e.g.*, at the beginning of the present decade there were in London 6,415 practitioners; in the English provinces, 17,721; in Wales, 1,336; in Scotland, 3,953; in Ireland, 2,724; and between eight and nine thousand were abroad or in the Services. The practice in regard to means of qualification varies somewhat according to the location of the student and additional influence. The exclusive character of Oxford and Cambridge, the principal English Universities, helped to establish the reputation of the Royal Colleges of England and of the Apothecaries' Societies as diploma-granting bodies. Dublin University followed suit, but simultaneously the Scottish Universities obtained a world-wide reputation as educating and examining bodies, so that when other universities were established in England and Wales their medical system was more Scotch than English. Without going further into this national question, we may note that there are educational institutions and medical diploma or degree granting bodies in Aberdeen, Belfast, Birmingham, Bristol, Cambridge, Cardiff, Dublin, Durham (Newcastle-on-Tyne), Edinburgh, Glasgow, Leeds, Liverpool, Manchester, St. Andrews (Dundee), and Sheffield. Associated with these are other large centres in which the educational establishments are situated, as is fully indicated in what follows, but the observation that we desire to make *now* is that in each and all of these places it is possible for the student to obtain a degree or diploma entitling him to be registered as a medical practitioner. This is the first essential in regard to cost, for the nearer one's home is to the place of study the smaller is the outlay in that regard. Perhaps even more important is the Preliminary examination which should be passed. The commonly recognised principle in this matter is that a University prefers its own Entrance examination to be passed by persons who want to take its degrees, or that the students have passed an examination equally stringent; the fact that a person is a registered medical student may not entitle him to proceed for a University's medical degree, although it does for any diploma. The moral of all this is that the student should consider well the conditions of the diploma or degree that he wants before passing a Preliminary examination, so as to ensure that the examination is suitable for the purpose. It may be useful to state also as regards students of pharmacy and registered pharmacists that neither the Pharmaceutical Preliminary examination nor the Minor is accepted in lieu of the Medical examinations. The G.M.C. "Regulations" prove this. The Minor certificate is simply not recognised, but the examining body may take it as proof that a man has received instruction in dispensing. The Secretary of the London Royal Colleges stated in a letter to a pharmacist: "If you will send me particulars of any examinations in general education that you have passed, together with any certificates on subjects of general education that you may have obtained from Government Departments or other bodies, I shall be glad to submit your case to the Chairman of the Committee of Management of this Board. I may say that we cannot accept the Preliminary examination of the Pharmaceutical Society in English, Latin, and arithmetic without further evidence of general education. There is no necessity to send me your pharmaceutical diplomas, as I have the Register of the Pharmaceutical Society."

The curriculum of study laid down by the General Medical Council stipulates that in every course of professional study and examinations the following subjects should be contained:

(1) *Physics*, including the elementary mechanics of solids and fluids, and the rudiments of heat, light, and electricity; (2) *Chemistry*, including the principles of the science, and the details which bear on the study of medicine; (3) *Elementary Biology;* (4) *Anatomy*; (5) *Physiology*; (6) *Materia Medica and Pharmacy*; (7) *Pathology*; (8) *Pharmacology and Therapeutics*; (9) *Medicine*, including medical anatomy and clinical medicine; (10) *Surgery*, including surgical anatomy and clinical surgery; (11) *Midwifery*, including diseases peculiar to women and to new-born children; (12) Theory and practice of *Vaccination*; (13) *Forensic Medicine*; (14) *Hygiene*; (15) *Mental Diseases*; (16) *Anæsthetics.*

These we divide in general accordance with the arrangements of the subjects according to the examinations, which are so adapted that when a student has finished the first year's work he enters for the First Professional examination in physics, chemistry, and biology. After passing these he goes on to the second year's subjects, studies them, passes the Professional examination in anatomy and histology (sometimes pharmacology), and so on to the end of the curriculum. It stands to reason that medical students will, before beginning professional studies, acquaint themselves with the nature of the scheme outlined by the examining body for whose qualification they are to study, so that the particulars that follow are solely intended to give a general idea of the curriculum, what the examinations are, and the fees for the same; and the addresses from which the official particulars can be obtained are appended.

University Degrees.

In the following paragraphs we indicate concisely the conditions framed by the Universities in the places named for the degrees in medicine and surgery (M.B., Ch.B., or the equivalent degree in medicine and surgery).

Aberdeen.—At least two of the five years' curriculum must be spent, and at least eight of sixteen specified subjects for M.B., Ch.B. must be taken, in the Aberdeen University, and the rest in some other University or College recognised by the University Court. Four Professional examinations have to be passed at the University (fees, 23*l*. 2*s*.). *Secretary*, Mr. D. R. Thom, University of Aberdeen.

Belfast.—The Faculty of Medicine of Queen's University of Belfast requires students to take at least three of the five years' medical course at the University in Belfast, and pass four medical examinations.

Birmingham.—Of the five years' curriculum for M.B., Ch.B., three or four (according to circumstances) must be passed at the University. Fee for each of the first four Professional examinations, 2*l*. Final examination, 8*l*. The First Professional examination in chemistry, physics, and biology may be passed before commencing study in the University. *Secretary*, Mr. Geo. H. Morley.

Bristol.—There are three Professional examinations for the M.B., Ch.B. Three of the five and a half years' course of study must be taken in the University. Address, The Registrar, Bristol.

Cambridge.—Students who have not taken the B.A. degree must pass the Previous examination or another accepted examination. The minimum residence at the University is nine terms (three years). Three Professional examinations lead up to the degree of B.C. An Act has also to be kept in the Public Schools, the candidate reading an original dissertation composed by himself on some subject approved by the Regius Professor of Physic before proceeding to the M.B. degree.

Dublin.—At least three years of the curriculum must be spent at the University, Trinity College. The degree of Bachelor of Arts must be taken in addition to the M.B. degree. Eight examinations have to be passed during the course.

Durham.—At least one of the five years of medical education must be spent at the University College of Medicine, Newcastle-on-Tyne, and the rest may be taken in approved medical schools. Four Professional examinations for M.B.; fees, 25'. Address the Secretary, The College of Medicine, Newcastle-on-Tyne.

Edinburgh.—The conditions and fees are the same as at Aberdeen University. The class-fees differ, and this University Medical School is one of the most famous in the world. Inquiries regarding the Preliminary examination should be addressed to Mr. James Dowie, The University, Edinburgh, and other inquiries to the Dean, Professor Littlejohn.

Glasgow.—The conditions for the M.B., Ch.B. qualification are almost the same as at Aberdeen. In respect of professional studies, address Professor Noël Paton, M.D., The University.

Ireland.—The National University confers medical degrees upon persons who have studied professionally at least nine terms at one or more of its constituent colleges (Cork, Dublin, and Galway) and the rest at approved schools. There are four Professional examinations for the M.B., B.Ch., and B.A.O. degrees. The full five years' curriculum is also obtainable at the University College, Dublin.

Leeds.—Three Professional examinations for M.B., Ch.B., each of which is taken in parts, the fees amounting to 15*l.* Of the five years' curriculum, two years must be spent in the University at Leeds. The Academic Sub-Dean and the Clerk to the Senate supply information.

Liverpool.—Degrees of M.B. and Ch.B. are granted on similar conditions as Leeds. Address the Dean of the Faculty of Medicine.

London.—The examination-fees for the double bachelorate amount to 25*l.* External students are allowed liberal provision as to places of study. The three Professional examinations for both classes are the same. Address the Secretary, The University, North Kensington, London, S.W.

Manchester.—Latin is a compulsory subject for admission; otherwise like Leeds. Two years of the curriculum must be passed at the University, and the Professional examinations taken there. Address the Dean of the Faculty of Medicine.

Oxford.—Graduates in Arts are alone eligible for degrees in medicine and surgery. The most convenient course for medical students is to take Responsions, the Preliminary Science examinations, and the Final Honour School of Physiology. The curriculum requires residence in Oxford for seven years. Address the Regius Professor of Medicine, University Museum, Oxford.

St. Andrews.—Degrees are granted on similar conditions to the other Scottish Universities. Students may take the whole of the curriculum at the University College, Dundee, or the first two years in the United College. Address Professor Kynoch, University College Medical Faculty, Dundee.

Sheffield.—At least three of the five years of the curriculum must be taken in the Sheffield University. The examination arrangements are similar to Leeds. Registrar, Mr. W. M. Gibbons, M.A.; Dean of the Faculty of Medicine, Professor J. B. Leathes, F.R.S., The University, Sheffield.

Wales.—For M.B., Ch.B. the scheme of study is in two parts, each extending over three academic years, and at least that period must be spent in one of the constituent colleges. Address the Registrar, University Registry, Cathay's Park, Cardiff.

Collegiate Diplomas.

Many medical students at Universities, and medical schools recognised by them, make sure of qualification by entering for one or other of the Collegiate diplomas, and a considerable number (especially in England) take no other registrable qualification.

The English Diploma.—This (M.R.C.S.Eng. and L.R.C.P.L.) is granted by the Royal College of Physicians of London and the Royal College of Surgeons of England. There are three Professional examinations during the five years' curriculum—viz.: *The First Professional Examination* is in chemistry, physics, biology, and practical pharmacy, and it may be taken immediately after passing the Preliminary examination if the candidate produces evidence of instruction in the subjects at a recognised school. See the official statement for particulars. Fee, 10*l.* 10*s.* *The Second Professional Examination* is in anatomy and physiology, and both must be passed at one time. Fee, 10*l.* 10*s.* *The Third or Final examination* at the end of the curriculum. Fee, 21*l.* Two years are between the Second and Final examinations. Particulars can be obtained from Mr. Frederic G. Hallett, Secretary of the Conjoint Board, 8-11 Queen Square, Bloomsbury, London, W.C. The Committee of Management considers special or war cases, such as those of pharmaceutical chemists.

Society of Apothecaries' Diploma.—The London Society grants a diploma in medicine, surgery, and midwifery, there being two examinations.—viz., *Primary* (fee 5*l.* 5*s.*) and *Final* (in two sections; fees 10*l.* 10*s.* and 5*l.* 5*s.*). Particulars from Mr. Frank Haydon, L.R.C.P., Water Lane, Blackfriars, London, E.C.

Irish Double Qualification.—The Royal College of Physicians in Ireland and the Royal College of Surgeons grant a registrable diploma, L.R.C.P.I., L.R.C.S.I., after four examinations in Dublin by their Conjoint Board. Write to Mr. Alfred Miller, Royal College of Surgeons, Stephen's Green, Dublin.

Dublin Apothecaries' Diploma.—The curriculum and three Professional examinations have to be passed. Fees for the latter 25*l.* 4*s.* The Registrar, Apothecaries' Hall, 40 Mary Street, Dublin, supplies the syllabus.

Scottish Triple Qualification.—The Royal Colleges of Physicians and Surgeons of Edinburgh, with the Royal Faculty of Physicians and Surgeons, Glasgow, grant the registrable diploma L.R.C.P. & S.E. and L.F.P.S.G. There are four examinations, the last being taken at the end of the fourth or fifth year. The examinations are held in Edinburgh or Glasgow, or both. Secretaries, Mr. D. L. Eadie, 50 George Square, Edinburgh, and Mr. Walter Hurst, Faculty Hall, St. Vincent Street, Glasgow.

MEDICAL EDUCATION.

We outline the facilities given by recognised medical schools in the United Kingdom, and refer inquirers to the Deans or Secretaries named for fuller particulars.

Aberdeen.—The *University Faculty of Medicine.*—The complete medical course (including class, hospital, and all examination fees for five years' curriculum, and fees for degrees) costs about 160*l.* Write to the Dean of Medicine, Marischal College, Aberdeen.

Belfast.—*Queen's University of Belfast.*—Complete courses (fees about 100*l.*, including clinical practice) are provided for the medical degrees of this University. Dean of the Faculty of Medicine, Professor Symmers.

Birmingham.—*University Faculty of Medicine.*—Composition-fees for M.B. and Ch.B. curriculum, 158*l.* 2*s.* 6*d.* Dean, Professor Peter Thompson.

Bristol.—The *University Faculty of Medicine.*—Complete curriculum for the medical degrees of the Universities of Bristol and London, and the diplomas of the Conjoint Board and the Society of Apothecaries. Inclusive fee (including hospital-practice), 140 guineas. Dean, Professor E. Fawcett, Bristol.

Cambridge.—Apply to the Registrary of the University, Cambridge, for full particulars as to regulations and courses of study. Inclusive expenses average about 110*l.* per academical year.

Cardiff.—The *University College of South Wales and Monmouthshire* is a constituent college of the University of Wales. The first three years of the medical curriculum can be taken in the Faculty of Medicine. Dean, Professor D. Hepburn, Cardiff.

Cork.—*University College* is a constituent college of the National University of Ireland, for whose degrees instruction costs about 125*l.*, and for the Irish Conjoint Diploma 142*l.* Dean, Professor A. E. Moore, Cork.

Dublin.—*Royal College of Surgeons' Schools of Surgery* (which include the Carmichael and Ledwich Schools) are under the supervision and control of the Council of the Royal College of Surgeons. Total expense of triple qualification (including examination-fees), 160*l.* 13*s.* A students' guide is supplied on application to the Registrar Royal College of Surgeons, Stepheu's Green, Dublin.

Dundee.—*University College.*—The full medical curriculum for the degree of the University of St. Andrews is available at this College, clinical instruction being given at the Dundee Royal Infirmary [400 beds].

Edinburgh.—*University Faculty of Medicine.*—The minimum fees for the complete curriculum (including hospital practice) amount to about 135*l.* for the M.B., Ch.B., besides 23*l.* 2*s.* for Professional examinations. Dean, Professor H. Littlejohn, Edinburgh. The University has now taken over the entire medical education of women in Edinburgh.

School of Medicine of the Royal Colleges.—The courses of instruction suit the University medical degrees and other medical qualifications. The minimum cost of the Collegiate triple qualification, including examination-fees, is 120*l.* Address the Dean, 11 Bristo Place, Edinburgh.

Galway.—*University College, Galway.*—The Dean of the Faculty of Medicine is Professor J. P. Pye, M.D., from whom full information can be obtained. The College is affiliated to the National University of Ireland, and the fees are similar to those obtaining in Cork.

Glasgow.—The *University Faculty of Medicine, including Queen Margaret College.*—The course for the M.B. and Ch.B. degrees (including hospital attendance) costs about 150*l.* Dean, Professor T. H. Bryce. Information regarding the women's school is supplied by Miss Melville, Mistress of Queen Margaret College, Hamilton Drive, Glasgow (School of Medicine for Women).

St. Mungo's College.—The fees for the complete medical course, which qualifies for the diplomas of the Conjoint Boards, amount to about 70*l.* Clinical teaching is taken at the Glasgow Royal Infirmary [600 beds] and the Royal Maternity Hospital. Dean, Professor Robert Jardine, M.D., 20 Royal Crescent, Glasgow.

The Anderson College of Medicine, Dumbarton Road.—The classes qualify for all the licensing bodies and the Universities (under certain conditions). Clinical instruction is given at the Western Infirmary, the Royal Infirmary, and the special hospitals. Dean, Dr. John Macintyre.

Leeds.—*The University Faculty of Medicine.*—The complete medical curriculum costs 195*l.* 16*s.* (including all fees and cost of books, microscope, etc.). Dean, Professor De Burgh Birch, C.B.

Liverpool.—The *University Faculty of Medicine.*—The composition-fees for M.B. and Ch.B. course amount approximately to 123*l.* Dean, Professor J. M. Beattie.

London.

The following medical schools are constituents of the London University:

Charing Cross Hospital Medical College, Chandos Street, W.C. [300 beds].—The approximate cost of medical education is given as 200*l.* (including examination-fees, books, and instruments). Dean, Dr. W. J. Fenton.

Guy's Hospital, London Bridge, S.E. [644 beds].—Fees, about 168*l.* There is a residential college in connection with the medical school. Dean, Mr. L. Bromley, M.C.

King's College Hospital Medical School, Denmark Hill, S.E.—Preliminary and Intermediate portions are taken at King's College. Composition-fee (157*l.* 10*s.*) can be arranged for University course or for Conjoint course. The course for the Final examination only costs 84*l.* Dean, Dr. H. Willoughby Lyle, F.R.C.S.

London Hospital Medical College, Turner Street, Mile End, E. [922 beds]. Fees, 31*l.* 10*s.* per annum. Dean, Professor W. Wright; Secretary, Mr. E. J. Burdon.

London (Royal Free Hospital) School of Medicine for Women, 8 Hunter Street, W.C.—Composition-fees for the degrees of University of London or the Conjoint Board qualification, 160*l.*; other courses cost 140*l.* Dean, Miss L. B. Aldrich-Blake, M.D.

Middlesex Hospital, Cleveland Street, W.—Composition-fees: For general students, 141*l.* 15*s.*; and for University of London students, 152*l.* 5*s.*; or the fees may be paid by instalments. Dean, Dr. H. Campbell Thomson. Sub-Dean, Dr. J. Strickland Goodall.

St. Bartholomew's Hospital and College, West Smithfield, E.C.—Fees, by a single payment, 173*l.* 5*s.* or 47*l.* 5*s.* annually for four years. Dean, Dr. T. W. Shore.

St. George's Hospital, Hyde Park Corner, S.W.—A purely clinical school, the annual composition-fee being 31*l.* 10*s.* Dean, Dr. R. Salusbury Trevor.

St. Mary's Hospital, Cambridge Place, Paddington, W.—Fees for full curriculum for Conjoint Board 140*l.*, or for University degrees, 145*l.* (5*l.* more if paid in instalments). Dean, Sir John Broadbent, Bart.

St. Thomas's Hospital Medical School, Albert Embankment, S.E.—Fees for Preliminary subjects 15*l.* 15*s.* per annum; second-year students, entrance 21*l.*, annual fee for all classes 31*l.* 10*s.*, fourth-year students (after second M.B.), entrance 10*l.* 10*s.*; annual fee 31*l.* 10*s.* Dean, Dr. Edward Stainer.

University College, Faculty of Medical Sciences, Gower Street, W.C.—Fees: University of London, First medical examination

course, 27*l.* 6*s.*; Second examination course, 60*l.* 18*s.* Composition-fees for the Conjoint Board and Society of Apothecaries' courses, 82*l.* 19*s.* for the First and Second courses. Final M.B. course or Conjoint Board, 84*l.* Clinical instruction, perpetual fee, 47*l.* 5*s.* Dean, Mr. J. Herbert Parsons, F.R.C.S., etc.

Westminster Hospital Medical School, Broad Sanctuary and Caxton Street, S.W.—Annual composition-fee, 26*l.* 5*s.* Dean, Dr. S. A. Kinnier Wilson.

Manchester.—*University Faculty of Medicine.*—Composition-fee for M.B. and Ch.B. degrees 73*l.* 10*s.*, and Conjoint Board examinations 87*l.* 3*s.*, with 42*l.* for clinical practice. Dean, Professor G. Elliot Smith.

Newcastle-on-Tyne.—*University of Durham College of Medicine.*—Clinical instruction is given at the Royal Victoria Infirmary. College fees 84*l.* and hospital fees 36*l.* 15*s.* Address the Dean.

St. Andrews.—*The University Faculty of Medicine.*—The full curriculum is provided at *University College, Dundee*, or the first two years may be taken at the United College, St. Andrews. Fees for the complete course (exclusive of examination-fees), 136*l.* 10*s.* Clinical practice is given at Dundee Infirmary [400 beds]. Dean, Professor Kynoch.

Sheffield.—*University Faculty of Medicine.*—Composition-fees: University Course 80*l.*, and hospital practice (Royal Infirmary and Royal Hospital, over 500 beds) 49*l.* 17*s.* 6*d.* Dean, Professor J. B. Leathes, F.R.S.

Dentistry.

The choice of dentistry as a career offers to the young of both sexes a profession in which ability and energy, combined with a moderate outlay of capital, are adequately remunerated. The profession in the past has been seriously handicapped, in the opinion of many qualified dentists, by the Dentists Act not being strong enough to stop unqualified persons practising. The result of patient research into the causation of dental caries and other diseases, and the importance of conservative dentistry, have in recent years demonstrated to the public not only the necessity for a high standard of ability in the practitioner, but also a thorough scientific training in the dental student. That this fact is fully recognised is shown by the insistance that the dental practitioners employed in public work, such as dentists to the military forces, to school clinics, and to different institutions, must be fully qualified and registered. The training of the dental student extends over a period of four years, and may be entirely carried out at a recognised dental school, or it may be acquired by part training at a dental school for two or three years, and an apprenticeship of two years to a qualified dentist. Both methods are good. The curriculum of the Royal College of Surgeons of England is as follows:

First Course.—Theoretical and practical chemistry and physics; 180 hours' lectures and practical work in chemistry and 120 hours' lectures and practical work in physics. Pass the *Preliminary Science examination* in chemistry and physics, same as that for L.R.C.P. and M.R.C.S.

Second Course.—Two years' instruction in mechanical dentistry; lectures on dental metallurgy, with a practical course; lectures on dental mechanics, with practical work, including the manufacture and adjustment of six dentures and six crowns. Pass the *First Professional examination*—(I.) Mechanical dentistry; (II.) dental metallurgy.

Third Course.—Lectures on dental anatomy and physiology, dental histology, dental surgery, with practical dental surgery; surgery of the mouth, dental bacteriology, dental materia medica, and practical instruction in anæsthetics—these at a dental school and hospital; and the following in a medical school: Lectures on anatomy, physiology, with practical physiology; surgery, and medicine. Dissections for twelve months. Practice of surgery and clinical lectures on surgery in a hospital for twelve months. Pass the *Second Professional examination*—(I.) General anatomy and physiology, general pathology, and surgery; (II.) dental anatomy and physiology, dental pathology and surgery, and practical dental surgery. Before the final subjects are entered for, the candidate must have completed the four-years' curriculum and be twenty-one years old.

Similar conditions apply to the qualifications of the following colleges, full particulars of which may be obtained from the addresses given:

Royal College of Surgeons of England, Queen Square, London, W.C.—Examination and diploma fees, 20 guineas.

Royal College of Surgeons, Edinburgh.—Three years' instruction in medical dentistry requisite. Examination-fees, 15*l.* 15*s.* Clerk, Mr. D. L. Eadie, 50 George Square, Edinburgh.

Royal Faculty of Physicians and Surgeons, Glasgow.—Similar to Edinburgh. Address Mr. Walter Hurst, 242 St. Vincent Street, Glasgow.

Royal College of Surgeons in Ireland, Stephen's Green, Dublin.—Examination and diploma fees, 21*l.*

All students before beginning their professional studies or work should be registered as students of dentistry, after passing an examination similar to that of medical students (*q.v.*), the conditions being substantially the same.

University Degrees and Diplomas.

Birmingham.—The degrees are B.D.S. (Bachelor of Dental Surgery) and M.D.S. (Master of Dental Surgery). Five-years' curriculum, cost 149*l.* 10*s.* L.D.S. (Licentiate in Dental Surgery) must be taken before B.D.S.

Bristol.—The degrees are B.D.S. and M.D.S. Inclusive fee for B.D.S., 190 guineas. The L.D.S. costs 168 guineas. The mechanical pupilage can be served in the University Laboratory. Fee, 80 guineas.

Dublin.—Trinity College grants degrees of B.Dent.Sc. and M.Dent.Sc. to its Arts graduates who have taken the dental curriculum and passed examinations.

Durham.—A licence is granted, for which there are four examinations; fees (including diploma), 15*l.*

Leeds.—The degrees are B.Ch.D. and M.Ch.D. There is also L.D.S. The approximate cost of the degree, including pupilage-fee and cost of books, instruments, etc., is put down at 271*l.* 12*s.*, and of the diploma 252*l.* 6*s.*

Liverpool.—Lecture-fees for B.D.S. 67*l.* 10*s.*, clinical practice 21*l.* Fees for L.D.S. (Liverpool), 58*l.* 10*s.*; other licensing bodies, 61*l.* 10*s.*; mechanical dentistry and hospital practice, 100*l.* Address Director of Dental Education.

London.—Degree of Master of Surgery in Branch II. Dental Surgery open only to London graduates in medicine. Examination-fee is 20*l.*

Manchester.—The B.D.S. curriculum lasts five years, and there are four examinations. Composition-fees: B.D.S., 63*l.*; L.D.S., (Manchester) 57*l.* 15*s.*, (R.C.S.Eng.) 63*l.* Dental Hospital fees, 130*l.* or 100*l.*

Dental Schools.

Dublin.—School of Dentistry, Lincoln Place. Fees: 12*l.* 12*s.* for hospital practice, 6*l.* 6*s.* for dental lectures; composition-fee 15*l.* 15*s.* per annum. Dean, Mr. George Sheppard.

Edinburgh.—Dental Hospital and School, 31 Chambers Street. Fee, 31*l.* 10*s.* for two years' hospital practice and outfit of instruments. The professional study and diploma cost 164*l.* 19*s.* Dean, Mr. William Guy, 11 Wemyss Place.

Glasgow.—Dental Hospital and School, 158 Renfrew Street and 15 Dalhousie Street. Dean, Mr. W. D. Anderson. Dental lectures and two years' hospital practice cost 31*l.* 10*s.*

Dental students can also obtain all their surgical training at St. Mungo's College. Dean, Professor Jardine.

London.

Guy's Hospital Dental School, London Bridge, S.E.—Complete curriculum for L.D.S. provided; fee, 52*l.* 10*s.* per annum. Instruction in dental mechanics, 52*l.* 10*s.* per annum. Inclusive fee for students for L.R.C.P., M.R.C.S., and L.D.S.Eng. courses of instruction is 199*l.* 10*s.* Dean, Mr. L. Bromley, M.C.

King's College, Strand, W.C.—Composition-fee for L.D.S. course, 36*l.* 15*s.* Dean, Professor W. D. Halliburton.

London Hospital Dental School, Mile End, E.—Fees: Dental mechanics (two years), 150*l.*; full L.D.S. course, 212*l.* 10*s.* Dean, Professor W. Wright. Secretary, Mr. E. J. Burdon.

London (Royal Free Hospital) School of Medicine for Women, 8 Hunter Street, Brunswick Square, W.C.—Courses and bursary for dental students. Dean, Miss L. B. Aldrich-Blake, M.D., M.S.

Middlesex Hospital, Berners Street, W.—Composition-fee, 56*l.* 14*s.* (or by instalments). Dean, Dr. H. C. Thomson, F.R.C.P. Sub-Dean, Mr. J. Strickland Goodall, M.R.C.P., F.R.C.S.

National Dental Hospital and College, University College Hospital Dental School, Great Portland Street, W.—Fee for complete dental curriculum, 180 guineas, or by instalments (four). Dean, Mr. Sidney Spokes.

Royal Dental Hospital of London, School of Dental Surgery, Leicester Square, W.C.—Instruction for L.D.S. (in dental mechanics, two years' hospital practice and lectures) costs 150*l.*; or hospital practice and lectures only, 53*l.* 3*s.* The approximate cost of education for the diploma (including fees, books, and instruments) is given as 280*l.* 14*s.* Dean, Mr. W. H. Dolamore.

St. Bartholomew's Hospital, Smithfield, E.C.—Dean of the Dental School, Dr. T. W. Shore.

St. George's Hospital, Hyde Park Corner, S.W.—Annual composition-fee for dental students, 15'. 15*s.* Dean, Dr. R. S. Trevor.

St. Mary's Hospital, Paddington, W.—Dental course, 52*l.* 10*s.* Dean, Sir John Broadbent, Bart.

St. Thomas's Hospital, Albert Embankment, S.E.—Dean, Dr. Edward Stainer.

Westminster Hospital, Broad Sanctuary, S.W.—Fees for lectures and general surgical practice for R.C.S. diploma, 52*l.* 10*s.* (if two years only are spent on hospital portion of course). Dean, Dr. S. A. Kinnier Wilson.

Manchester.—The Dental Hospital, Oxford Road, in association with the University of Manchester and the Royal Infirmary. Fee for whole dental hospital practice and training in mechanical dentistry for B.D.S. degree, 130*l.*, or L.D.S. diploma 100*l.* Dean, Mr. J. Hilditch Mathews.

Newcastle-on-Tyne.—Durham College of Medicine and the Newcastle-on-Tyne Dental Hospital and School, Haudysides Buildings, Percy Street. Composition-fee, 43*l.* 1*s.*

Sheffield.—The total minimum fees in the University Dental School for the R.C.S. diploma are given at 166*l.* 10*s.*

Veterinary Surgery.

Veterinary practice in Great Britain and Ireland is subject to the provisions of the Veterinary Surgeons Act, 1881, under which the Royal College of Veterinary Surgeons, Red Lion Square, London, W.C., is empowered to grant licences to practise and to exercise powers similar to those of the General Medical Council, except that the Royal College, unlike the G.M.C., conducts the Professional examinations. Before commencing study at one of the affiliated Colleges, the student must prove to the College

which he enters that he has passed an examination in general knowledge; in fact, any examination recognised by the G.M.C. is also accepted by the R.C.V.S., but the latter has had to lower the standard, and now accepts certificates which prove that the holder has passed in English, mathematics (Euclid, Books I. to III.), and two languages (Latin, Greek, French, German, or any other modern language). This examination must be passed before the student commences his professional studies.

The Curriculum

for M.R.C.V.S. lasts four years, with an examination at the end of each academic year. There are four Professional examinations, and particulars of them may be obtained from Mr. Fred. Bullock, Secretary, Royal College of Veterinary Surgeons, 10 Red Lion Square, London, W.C. The subjects of the curriculum are substantially those of the Professional examinations, viz.:

First Professional Examination.—Anatomy of the domesticated animals: Bones, ligaments, joints; chemistry and elementary physics; elementary zoology and botany.

Second Professional Examination.—Anatomy of the domesticated animals; histology and physiology; stable management, the manipulation of animals, and the principles of shoeing.

Third Professional Examination.—Pathology, bacteriology, and protozoology; materia medica, pharmacy, and toxicology; veterinary hygiene and dietetics.

Fourth Professional Examination.—Principles and practice of veterinary medicine and clinical medicine; principles and practice of veterinary surgery, clinical surgery, obstetrics, and shoeing; meat inspection.

The following are the Veterinary Colleges in the United Kingdom. We advise intending students to get the prospectus of the College at which they think of studying, so as to obtain full and useful information in regard to studies and professional practice. We may note here that each of the following educational establishments is affiliated to the Royal College of Veterinary Surgeons, which is not an educational body:

Dublin.—*Royal Veterinary College of Ireland* (under the Department of Agriculture and Technical Instruction for Ireland), Pembroke and Shelbourne Roads, Balls Bridge.—Fees, 21*l.* per session, with 1*l.* 1*s.* entrance-fee. Principal, Professor A. E. Mettam. Registrar, Mr. G. E. Haines.

Edinburgh.—*Royal (Dick) Veterinary College* (founded 1823).—Entrance and class fees for the complete curriculum amount to 72*l.* 9*s.*, in four payments, with an extra fee of 5*l.* 5*s.* for each subsequent period of ten weeks. Principal, Professor O. Charnock Bradley. The College has now been transferred to the new buildings.

Glasgow.—*Glasgow Veterinary College* (established 1862; incorporated 1909), Bucceleuch Street, Garnethill.—The fee for the complete course is 72*l.* 9*s.* Principal, Professor J. McCall.

London.—*Royal Veterinary College* (founded 1791; incorporated 1875), Great College Street, Camden Town, N.W.—Educational fee for the four years' course of instruction, 84*l.*, paid in four instalments, and 2*l.* 12*s.* 6*d.* library fee. There are also fees for occasional students, from 3*l.* 3*s.* to 8*l.* 8*s.* per subject, and post-graduate course, fee 10*l.* 10*s.* Principal and Dean, Professor Sir John McFadyean, M.B., M.R.C.V.S., etc.

Degrees in veterinary science are also granted by the Universities of Bristol, Edinburgh, Glasgow, Liverpool, London, and Manchester. Students should decide before passing a Preliminary examination whether they intend taking a degree or not, as taking one means passing the University Entrance or Preliminary examination. F.R.C.V.S. is granted by the R.C.V.S. to members, who learn all about it during the four-years' curriculum.

Science.

In the midst of the distress occasioned by the present war there is one bright spot which grows bigger with the march of events. This is that science, and in particular chemistry, can no longer be treated with the contempt meted out to it in the pre-war days. Engineers have long ago firmly established themselves as a national asset, but the chemist has hitherto been regarded largely as an unnecessary luxury or an interfering nuisance whose work gave results very little better than those obtained by the many years' established rule-of-thumb methods. That there should be a chemists' corps in the Army is a great advance. Let it be clearly understood that we are here discussing the chemist who is not the pharmacist. Even in these difficult times manufacturers are making chemicals hitherto imported from abroad, and to do this men with a chemical knowledge are required. These men at the commencement of their industrial career need not necessarily be possessed of a close knowledge of the article they are to handle, but they must have a fundamental knowledge and the chemical sense to appreciate the various points brought out in the literature on the subject. They must, in short, have a sound knowledge of chemical theory. Further, this must be accompanied by an acquaintance with chemical engineering. How, then, is it best to obtain these? At the outset one must distinguish between the industrial chemist and the pure chemist. For the pure chemist the prospect is bordered by the four walls of the laboratory wherein he can work on undisturbed by the necessity of making a financial success of his efforts. He may indeed discover the germ of a new industry, but that is not his main object. His guiding idea is the increase of chemical knowledge solely. If this be the ambition of the aspiring chemist, his training will be obtained best at a resident university. For the industrial chemist a college training is advisable. The curriculum at such institutions is a mixed one, and in most cases the college trains in engineering as well. Usually the first year students are taken as a whole. Under these circumstances it is a cardinal error for the chemical student to give only casual study to the engineering part of the course. It will be quite time enough for him to specialise in his second or third year. We would prefer a more extensive engineering course in the second year than is usually given. There are few positions in the industrial chemical world where a sound knowledge of engineering is not of immense importance. The work a chemist in any important position is called upon to do often includes the setting-up of machinery to carry out some manufacture where the difference between financial success and failure depends on the economical working of the plant. While the engineer will be able to lay down the plant on efficient engineering lines it will frequently happen that this will not tend towards success from a chemical standpoint. Herein lies the chance for the chemical engineer, and the factory that possesses such a man is in a happy state. Unfortunately, hitherto such a possession has not been rated at sufficient value. On the chemist depends the decision of what has to be done and how it is to be carried out; the engineer must make his arrangements so that the plant does its chemical work efficiently. Therefore let the intending chemist choose a college where engineering forms a notable feature in the training, and if he can spare a year after gaining his degree or diploma let him seek for a course in chemical engineering.

The three-years' course of the colleges is fairly well stereotyped, and merely varied in its details by either the leanings of the professor or by the special industries prevalent in the district. It is very rare that a prospective chemist can rightly tell in what sphere of chemical industry his talents will lead him farthest, so it is at a considerable risk that he decides to enter a college which trains for a specific industry. Rather let him get a general training in the theory of chemistry, and then apply this to the special branch to which his inclinations lean. By the end of the third year he will probably have some idea what line he would like to follow. If this be so, the fourth year's course should be one of research-work along lines relevant to this inclination. A lengthy piece of research occupying the whole year is inadvisable. A series of shorter investigations of a varied nature will be of infinitely more value. Too often do we find the fourth year devoted to some abstruse chemical reaction forming a link in the peculiar research on which the professor is engaged. Working on such a subject as this tends either to make the student a dogmatic upholder of a certain theory of which he himself knows only a small part, or to foster the idea of working merely because he is expected to produce some results without properly understanding the why and wherefore of his experiments. Research-work to be of use in industrial chemistry must end in some tangible result, and the working for a definite result will be a training of inestimable value.

Care should be taken that this year of research is not broken into by the working for examinations, since the extraneous work necessary will detract from the concentration required for the prosecution of a successful research. By way of relaxation during working-hours the before-mentioned course in chemical engineering should be attended.

The mention of examinations naturally brings to mind the present hall-mark of the chemical profession—namely, the Associateship of the Institute of Chemistry. Among those who put store by diplomas this is the Ultima Thule of the chemist. As an examination in analytical chemistry on a practical basis it is beyond criticism. The exercises to be carried out are usually of a strictly practical nature, and the examinee is judged on his ability to carry out an analysis in an accurate manner with all the assistance he can obtain from an excellent library, and very often from hints given by the examiners themselves. From this point of view we have nothing but praise for the examination, for the man who is to get his degree must have a sound knowledge of the analytical work connected with the branch

ho chooses. For the theory paper and the *viva voce* not so much can be said. With such a broad field as that displayed by modern chemistry it is obvious that the chief element is that of luck as to whether the papers and the examiners hit on a subject with which the candidate is familiar. Though we do not regard the A.I.C. as the hall-mark of the industrial chemist, we should advise everyone to take the diploma, for there are many in whose hands lies the appointing of chemists who do not agree with us. Further, it is, at any rate, a mark of much hard and well-digested study. Since the degree of many colleges carries with it exemption from the Intermediate examination of the Institute, it is advisable to take the Final examination for the associateship early in the fourth year, so as not to break in upon this valuable time for research-work. We note below what the Institute affords.

Finally, we would advise all chemists to acquire more than a nodding acquaintance with both French and German. There is very much very valuable information hidden from the average works-chemist in the scientific literature in these two languages; and if we are to take the place in the scientific industry of the world which from our abilities is ours, we must seek light wherever it is to be found, be it in the records of our present military Allies or enemies.

QUALIFICATIONS IN SCIENCE.

The outstanding chemical qualification in this country is that provided by the INSTITUTE OF CHEMISTRY, 30 Russell Square, London, W.C.—viz., Fellow of the Institute of Chemistry (F.I.C.)—which is now granted solely as the result of study and examination, as briefly explained in the following paragraphs:

STUDENTSHIP.—Candidates must be at least seventeen years of age and have passed an approved Preliminary examination, and at the time of application be training at a recognised institution or under a Fellow of the Institute. Annual registration-fee, 5*s.*

INTERMEDIATE EXAMINATION.—The course of study in chemistry, physics, mathematics, and a fourth subject extends to three years, or one less if a candidate is a pupil with a F.I.C. Examination-fee, 5*l.* 5*s.*

FINAL EXAMINATION.—Includes a general knowledge of chemistry and special knowledge in one branch, besides ability to translate French and German technical literature into English. See the Institute's particulars. Examination-fee, 5*l.* 5*s.*

Further examinations are also provided—*e.g.*, (1) Food and drugs to qualify for public analyst, and (2) biological chemistry. Fee, 5*l.* 5*s.* in each case.

Degrees in science are given by all the Universities. B.Sc. is, for example, given to those who have put in a curriculum of three years at the University and passed the Professional examinations provided. These are held yearly, the subjects being according to the department of knowledge in which the degree is required. The particulars are given in the University prospectuses. The University of London grants its degree in science *sine curriculo*, as well as to internal students. In this University, as well as in all others, the University Matriculation examination or its equivalent has to be passed. In London the other arrangements are as follows:

A year after passing the Matriculation examination a student may enter for the *Intermediate examination* (fee, 5*l.*), taking four subjects from the following, including at least one from the first three: Pure mathematics, applied mathematics, experimental physics, chemistry, botany, zoology, geology, military science, and general physiology (internal students). The *Final examination* (fee, 5*l.*) may be taken one year after passing the Intermediate, but three years must elapse between the Matriculation and Final examinations. Three out of thirteen prescribed subjects are to be taken in the Pass Final examination; Honours candidates take only one subject (of a much higher standard) along with an appropriate subsidiary subject.

The London degree is still the most popular, but those who have the opportunity of attending the Science classes of any other University should get their own University's science degree.

SCIENCE SCHOOLS.

The following are the principal institutions at which science instruction can be obtained. For further particulars students should apply to the Secretary of the institution they propose to enter:

ABERDEEN.—*University.*—Degree courses in science. *Robert Gordon's Technical College* includes a well-equipped Chemical Department (as well as Pharmaceutical) and other classes in applied science.

ABERYSTWYTH.—*University College of Wales.*—Science course, 16*l.* per session (with practical work). Registration-fee, 1*l.*

BANGOR.—*University College of North Wales.*—Inclusive fees as at Aberystwyth.

BARROW-IN-FURNESS.—*Technical Schools, Abbey Road.*—Evening classes in chemistry are available.

BELFAST.—*Queen's University.*—Class fees in the Faculty of Science, from 1*l.* 1*s.* to 3*l.* 3*s.* each subject, except practical chemistry, the fee for which is 7*l.* 7*s.*

BIRMINGHAM.—*University.*—B.Sc. curriculum (pure science), 15*l.* 15*s.* to 28*l.* per annum. *Municipal Technical School, Suffolk Street.*—Evening classes in chemistry, botany, and physics; fees, 5*s.* to 10*s.* per session (botany from 2*s.* 6*d.*).

BLACKBURN.—*Technical School.*—Day and evening classes are available in chemistry, physics, and botany.

BRADFORD.—*Technical College.*—Day technological diploma courses, extending over three or four years, in chemistry and dyeing. Fee, 16*l.* 16*s.*

BRIGHTON.—*Municipal Technical College.*—Day courses for University of London examinations; fee, 5*l.* 5*s.* per term.

BRISTOL.—*University.*—Degree courses for B.Sc., M.Sc., and D.Sc. *Merchant Venturers' Technical College.*—Chemistry, physics, and nature study classes (evening), 10*s.* per subject.

CORK.—*University College.*—A constituent College of the National University of Ireland. Class-fees usually 1*l.* to 5*l.*, except practical chemistry and post-graduate courses, 5*l.* to 10*l.* each.

DERBY.—*Technical College.*—Classes in chemistry, botany, and physics. Fees: Day, 10*l.* 10*s.* per course, or 10*s.* 6*d.* per subject per term; evening, 10*s.* 6*d.* to 1*l.* 1*s.* per annum.

DUBLIN.—*Royal College of Science.*—Similar to the Imperial College in South Kensington. Three years' course for A.R.C.Sc.I. in chemistry (pure and applied) and other branches.

DUNDEE.—*University College.*—Day classes in botany, chemistry, and physics; fees, 1*l.* 11*s.* 6*d.* to 4*l.* 4*s.* for each winter or summer session. *Technical College.*—Central Institution for eastern counties of Scotland for technical and art instruction, particularly engineering and textile.

EDINBURGH.—*Heriot Watt College, Chambers Street.*—The day chemistry course is recognised by the University of Edinburgh and the Institute of Chemistry; composition-fees, 12*l.* 17*s.* to 16*l.* 16*s.* for the winter course and 3*l.* 3*s.* to 6*l.* 6*s.* for the summer laboratory course. Evening classes in chemistry, botany, physics, pharmaceutics, and mycology cost from 5*s.* to 21*s.* per session.

EXETER.—*Royal Albert Memorial University College.*—The composition-fee for the degree course in science is 12*l.* 12*s.* to 18*l.* 18*s.* per annum. Evening classes in science, 5*s.* to 10*s.* per subject each session. Dispensing, evening course 1*l.* 1*s.* per term.

GLASGOW.—*University.*—The class-fees for the degree courses in science range from 1*l.* 1*s.* to 4*l.* 4*s.* per session for each subject, with higher fees (10*l.* 10*s.*) for practical chemistry. There are also inclusive fees. *The Royal Technical College.*—Day classes in chemistry, 1*l.* 11*s.* 6*d.* to 3*l.* 3*s.* The day and evening classes include chemistry, technical chemistry (oils and fats, fuel, gas-manufacture, sugar-manufacture, dyeing), physics, botany, and bacteriology; fees, from 2*s.* 6*d.* to 2*l.*

HALIFAX.—*Municipal Technical College.*—Evening classes in chemistry, 7*s.* 6*d.* per course. Day classes, 4*l.* 4*s.* per course.

HUDDERSFIELD.—*Technical College.*—Full-day (fee, 6*l.* 6*s.* per session) and evening courses (fee, 15*s.* per session) in chemistry, physics, botany, zoology, physiology, hygiene, and other science and technological subjects. The College is recognised as a Medical School for first-year students.

HULL.—*Municipal Technical College, Park Street.*—Evening classes in all stages of organic and inorganic chemistry—colours, oils, and varnishes; oils, fats, and waxes; gas engineering, etc.—at fees from 5*s.* to 10*s.* Full-time day courses in pure and applied chemistry and for B.Sc. (London) for a four-years' period at 3*l.* 3*s* per term.

LEEDS.—*University.*—The composition-fee for science degree course is 27*l.* 11*s.* per annum for the first three years and 21*l.* 11*s.* for the fourth year.—*Central Technical School, Cookridge Street.*—Evening courses in chemistry, at 7*s.* 6*d.* to 15*s.* per session, which commences on September 25.

LIVERPOOL.—*University.*—Degree courses in science; fees, 3*l.* to 4*l.* per course. Laboratory, 6*l.* to 21*l.*

LONDON.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY, South Kensington, S.W.—This is a national institution, and includes the Royal College of Science and the City and Guilds (Engineering) College. The purposes of the Imperial College are to give the highest specialised instruction and to provide the fullest equipment for the most advanced training and research in various branches of science, especially in its application to industry. Systematic courses, leading up to an Associateship of the R.C.S. or R.S.M. or the C. & G. College, are given in mathematics and mechanics, physics, chemistry, biology, and engineering (mining, metallurgy, technology of oil, civil, mechanical, and electrical). For admission to Associateship courses of instruction candidates must either qualify at the College Entrance examination or satisfy the authorities that they have passed an equivalent approved examination elsewhere (*e.g.*, the London Matric. if taken in certain specified subjects). The fees for Associateship courses vary from 36*l.* 10*s.* to 45*l.* 10*s.* a year. The College is prepared to receive a limited number of applications for admission at reduced fees, or without fee in the case of students who are qualified to enter upon post-graduate or post-associateship work on admission. Many valuable scholarships are tenable at the College. Particulars of these and a prospectus of any of the Colleges may be obtained on application to the Registrar.

BATTERSEA POLYTECHNIC, Battersea Park Road, S.W.—Most scientific subjects (some of them special—*e.g.*, essential oils) obtainable here at 5*s.* or 10*s.* per class, including practical work.

CITY OF LONDON COLLEGE, White Street, Moorfields, E.C.—Evening classes in chemistry (pure and commercial) cost 15*s.* to 30*s.* per session for non-members.

EAST LONDON COLLEGE, Mile End Road, E.—Classes in chemistry, mathematics, physics, and botany for B.Sc.; day classes 10*l.* 10*s.*, evening 5*l.* 5*s.*

KING'S COLLEGE, Strand, W.C.—Composition-fee for science, 31*l.* 10*s.* per annum. Dean, Professor S. A. White, M.A.

NORTHERN POLYTECHNIC INSTITUTE, Holloway, N.—Composite-fees for M.Sc. courses: Day, 15*l.* per annum; evening, 2*l.* 10*s.* to 5*l.* 15*s.* per session. Evening classes in chemistry, botany, physics, and photography cost from 5*s.* to 50*s.* each subject.

South-Western Polytechnic, Manresa Road, Chelsea.—Includes excellent courses—*e.g.*, one dealing with the analysis of foods and drugs on Tuesday evenings at 7 P.M. This is suitable for the Institute of Chemistry (Branch E) Final examination and as a post-graduate course for pharmacists.

Sir John Cass Technical Institute, Jewry Street, Aldgate, E.C.—Evening courses in chemistry, physics (fees, 4*s.* to 10*s.*), also on fermentation industries, fuel, metallurgy, and mining (fees, 5*s.* to 19*s.*). Composition-fees for B.Sc. course, from 30*s.* to 3*l.*

Technical College, Leonard Street, Finsbury, E.C.—Constituent of City and Guilds of London Institute. Fees for courses in applied chemistry, under the direction of Dr. G. T. Morgan, F.I.C., F.R.S., 20*l.* per session. The practical training of students intending to qualify for the career of industrial chemist is a feature of this chemical school. The necessary engineering and electro-chemical instruction is gained in the department of mechanical and electrical engineering. Full particulars are given in the official programme, which may be had from the Principal.

University College, London, Gower Street, W.C.—Fees for three years' B.Sc. course, including chemistry, 106*l.* 1*s.*

West Ham Technical Institute, Romford Road, E.—Evening and day classes in chemistry and physics.

Manchester.—*University.*—Degree courses in science; fees, 20*l.* to 35*l.* per session. The *School of Technology* also provides specialised instruction in applied chemistry.

Newcastle-upon-Tyne.—*Armstrong College.*—Fees for curriculum of B.Sc. Durham in pure science, 60*l.*

Norwich.—*Technical Institute.*—Evening classes in chemistry and physics; fees, 3*s.* 6*d.* to 15*s.* per session. Practical chemistry and practical physics classes are held two mornings per week.

Nottingham.—*University College.*—B.Sc. (Lond.) day course in chemistry; fee, 6*l.* per term. Evening classes in chemistry, physics, botany; sessional fees, 7*s.* 6*d.* per class to 10*s.* per course.

Plymouth.—*Municipal Science, Art, and Technical Schools.*—Day courses in science subjects cost 1*l.* to 5*l.* 5*s.* per subject, or degree course 12*l.* 12*s.* to 15*l.* 15*s.* per session. Evening classes 5*s.* to 10*s.* each, or course of study 10*s.*

Portsmouth.—*Municipal College.*—Instruction in science subjects (including chemistry, physics, pharmacy, biology, and botany) costs from 3*s.* 6*d.* to 15*s.* per course at evening classes and 5*l.* 5*s.* to 10*l.* 10*s.* per session at day classes.

Reading.—*University College.*—B.Sc. course for London University examination, 24*l.* per session. Evening classes in chemistry and botany; fees from 7*s.* 6*d.* to 1*l.*

Rochdale.—*Municipal Technical School.*—The fees for chemistry and botany (evening classes) are 6*s.* per session, practical work included.

Salford.—*Royal Technical Institute.*—Two-years' day course, for which a diploma, endorsed by the Board of Education, is awarded; fees, 5*l.* 5*s.* to 6*l.* 6*s.* Evening courses in chemistry and physics, qualifying for course and higher course certificates; fees, 7*s.* 6*d.* to 1*l.* 5*s.*

Sheffield.—*University.*—Degree courses in science. Sessional lecture-fees, 1*l.* 11*s.* 6*d.* to 4*l.* 4*s.* per course; laboratory-fees, 2*l.* 12*s.* 6*d.* to 16*l.* 16*s.* per session. Evening classes in botany, chemistry, and physics; fee, 10*s.* 6*d.* per course for each subject, and practical work 1*l.* 10*s.* *Central Secondary Evening School.*—Classes in chemistry and botany; fees, 4*s.* to 15*s.* 6*d.* per subject.

Southampton.—*The University College.*—Complete courses for University of London Science degrees; composition-fee, 24*l.* per session. Evening science classes; fees, 5*s.* to 10*s.* per subject. See "Handbook of the Univerity College," to be obtained on application to the Registrar.

Swansea.—*Technical College.*—Evening classes in chemistry, physics, and botany; fee, covering all subjects, 10*s.* per session. Day courses are held for degrees in science.

Optical Diplomas.

The importance of the optical-industry has been enhanced considerably as a result of the war. The manufacture of optical instruments, which are so largely needed in warfare, is recognised as a "key" industry, and it is likely that Government recognition, which has already been extended to the making of glass for optical instruments, will be carried further. We announced recently that the scheme for an Optical Institute which the Governors of the Northampton Polytechnic prepared some years ago, but for which in peace-time it was impossible to obtain grants of money from the London County Council, has at last been partially adopted. It is intended that post-graduate and research work in optics will be conducted at the Imperial College of Science and Technology, and that grants shall be made to the trade school and senior day and evening technical courses at the Northampton Polytechnic. Junior technical courses are also to be provided at two other institutes—one in North London and one in South London. The war has also shown the importance of corrected eyesight to the nation in increasing the efficiency of soldiers, and, although the War Office sight-tests are still behind those of other nations, it would appear that considerable advance has taken place in the recognition of the use of spectacles as aids to sight.

The public has for some years taken an increasing interest in optical aids to vision, due, we believe, to the advance in educational facilities for opticians. There is in this country no legal qualification required in order to practise as an optician, but it is desirable that those pharmacists who wish to take up this profitable side-line should possess the diploma of one or other of the examining bodies as evidence of training and of their skill and competency to undertake the work of sight-testing and spectacle-fitting. The optical business is now placed on a proper scientific basis, largely on account of the examinations in optics instituted towards the end of last century by the Spectacle-makers' Company and the British Optical Association. These examinations, which have developed into very complete tests of knowledge in ophthalmic optics, have always been well supported by pharmacists, who frequently follow up the Minor examination by taking a diploma in optics. We also direct attention to the advantages to chemists who are interested in optics of becoming connected with the Society of Chemist Opticians, which was founded in the interests of chemists carrying on an optical business. Membership carries with it a weekly journal ("The Optician") and certain concessions in the way of fees charged by optical tutors. The Hon. Secretary is Mr. J. Harcombe Cuff, 25 Friern Barnet Road, London, N.

Diploma Schemes.

Of the two schemes now in operation the better-known is that of the Spectacle-makers' Company, 11 Temple House, Temple Avenue, London, E.C.—The diploma scheme of the Company was founded in 1898, and has been revised at intervals on progressive lines. There are now over 1,000 holders of the Company's diploma, and a good proportion of these are chemists.

There are two divisions of the examinations for the diploma in visual optics and sight-testing:

(1) The Preliminary division, consisting of (*a*) optical bench work, (*b*) a *viva-voce* examination in general and practical optics, (*c*) a written examination in optical calculations and practical optics, and (*d*) a practical examination in the optical analysis of lenses.

(2) The Final, consisting of (*e*) practical examination in frame adjustments and measurements, optical prescriptions, and lens-setting, (*f*) *viva-voce* examination in visual optics, (*g*) written examination in visual optics, and (*h*) practical examination in the adaptation of lenses to correct errors of vision.

Candidates over the age of forty years, who have spent ten years in the optical industry, are exempt from section (*c*) of the Preliminary division. The examinations are held in London early in May and November of each year. The next examination will be held at St. Bride Institute, Ludgate Circus, E.C., in the first week of November. Entries must be received three weeks before the date of the examination. The Company also holds examinations in Glasgow when the number of candidates choosing that centre is sufficient.

The list of books recommended for students is given in the syllabus. The fees are 3*l.* 3*s.* for each of the two divisions of the examination, and in addition there are Government, registration-fees, etc., amounting to 4*l.* 4*s.*, payable when the diploma is issued. Those who take up the freedom of the City of London, which they are entitled to claim when they have become freemen of the Spectacle-makers' Company, can do so on payment of one guinea on their being accepted by the Corporation. There is an annual payment of 4*s.* to the Company for "quarterage." The full prospectus, with application form, can be obtained from the Clerk of the Company, 11 Temple House, Temple Avenue, London, E.C.

The British Optical Association (Incorporated 1895). Secretary, Mr. J. H. Sutcliffe, F.B.O.A., Clifford's Inn, London, E.C.—The Association's examination scheme, which has undergone considerable modification of late years, consists of two grades of examination, Membership (Intermediate certificate) and Fellowship, and these are held in London twice yearly (May and November), or in the provincial centres when a sufficient number of candidates desire it. The examination for the Intermediate consists of three sections, two being practical and the third theoretical. The theoretical part can be taken separately and in advance of the practical work, although no certificate is given until the practical examination is passed. The subjects in which the candidate is examined are lenses, frames, subjective sight-testing, dissection, physical optics, physiological optics, anatomy and physiology of the eye, phorometry, and ethics.

For the Fellowship examination candidates must hold the Intermediate or dioptric certificate, and are examined in similar subjects as before, but a deeper knowledge is required, and prismetry, opthalmoscopy, embryology, and microscopical demonstrations are included. The examination-fees are: Intermediate certificate, 5*l.* 5*s.*; Final (Fellowship grade), 5*l.* 5*s.*

Optical Instruction.

The following are the principal schools where instruction can be obtained in optics and in preparation for the examinations of the bodies mentioned:

The British Optical Institute, Ltd., Fern Lodge, 20A Grove

Road, Brixton, London, S.W., offers every facility for the instruction of those wishing to prepare for the examinations of the British Optical Association and the Spectacle-makers' Company. The necessary tuition is obtainable at day and evening classes, or by a well-devised and highly successful system of postal courses. The Institute is well equipped for the special teaching of practical sight-testing in clinic classes under the guidance of trained instructors. Good examination results are shown. Vacation classes, with individual attention, not necessarily for examination purposes, are held during the months of August and September. Now that so many men have been called to the Colours from the optical profession, the Institute has organised an intensive course of teaching whereby women can be trained in a short time to undertake the work of a sight-testing optician. A fully detailed prospectus is sent on application to the Principal, Dr. Max Coque, B.Sc.

The College of Optics, Glasgow and Edinburgh, conducted by Mr. T. S. Baird, F.R.M.S., affords instruction for those preparing for the diplomas of the two recognised examining bodies who periodically hold examinations in Glasgow. Classrooms have been opened in Glasgow at 12 Renfield Street. There are day and correspondence classes which cover all the subjects; the winter session commences in September. Particulars of the classes can be obtained from Mr. T. S. Baird at the above address.

Glasgow School of Optics, 180 West Regent Street, Glasgow. Principal, Mr. M. M. Irvine, D.B.O.A.; assistant, Mr. James Tulloch, M.A.—Classes are held on Wednesday and Friday evenings in visual optics, sight-testing, optical bench work, and frame-fitting. The course commences on the last Friday of September, and is suitable for students preparing for the diplomas of the British Optical Association and the Spectacle-makers' Company. Certificates are awarded to students who complete the course.

Mr. A. E. Grey, 13 Spencer Street, Clerkenwell, London, E.C., receives pupils for personal instruction, practical work, and sight-testing by objective and subjective methods.

Mr. Lionel Laurance, Institute of Optics, Temple House, Temple Avenue, London, E.C., conducts, in association with Mr. H. Oscar Wood, courses of instruction in preparation for the examinations of the Spectacle-makers' Company. The tuition is both in class and by correspondence. The fees for the Preliminary division of the examination are 4*l.* 4*s.*, and for the Final division in sight-testing 4*l.* 4*s.* Mr. Laurance is Official Instructor to the Spectacle-makers' Company, and is the author of the text-books for the Company's examinations—"General and Practical Optics" and "Visual Optics and Sight-testing."

The Northampton Polytechnic Institute, Clerkenwell, London, E.C.—The courses in optics are held in the main building and in the British Horological Institute in Northampton Square. The full day course of technical optics for opticians occupies two years, and consists of lectures, laboratory work, drawing-office work, tutorial classes, and workshop practice. A diploma in technical optics is awarded on the completion of a two-years' course with satisfactory records in examination and class-work. Evening students also receive certificates of attendance and satisfactory progress. The winter term begins late in September. The fees for the full-time day course are 15*l.* per session (September to July). Partial courses (two afternoons a week) may also be taken, for which the fee is 3*l.* per session, and there are afternoon classes suitable for chemists in business who cannot leave during the whole day. The entire field of optics is covered both theoretically and practically, and students can specialise either in opticians' work or in optical-instrument making. The prospectus of the optical department can be had by applying to Dr. R. Mullineux Walmsley, the Principal.

Mr. J. G. Wallbridge, F.S.M.C., School of Optics, 227 Kensington, Liverpool, conducts optical classes, chiefly through the post. He also makes a point of his willingness to attend at chemists' places of business, or to instruct those within easy reach of Liverpool who can arrange periodical visits for practical work.

A School of Drug-growing.

An interesting development of the present demand for vegetable drugs is the establishment at Chalfont St. Peter, Buckinghamshire, of the War Workers' Medicinal-plant Nursery. Mrs. M. Grieve, F.R.H.S., who has started the idea, already has a number of women students keen to learn the special points connected with the growing of medicinal plants. The students are taken for terms of thirteen weeks at 5*l.* 5*s.* for one term, 8*l.* 8*s.* for two terms, and 12*l.* 12*s.* for three terms. It takes from two to three years to become proficient in the growing of every drug-plant, but in a shorter period students can specialise in the few plants urgently required for commercial use if they do not wish to go through the whole course. Special pamphlets are issued to the students which give instruction on medicinal plants and save the students hours of research-work. All necessary information is given concisely and in small space. The students are taught trenching—an important operation, not so simple as it sounds. They are also taught how to recognise differences that indicate medicinal value—the history of each plant, the Latin name and its countryside equivalent—how to propagate and care for the plants until they reach maturity. They are also taught which part of the plant to gather and the right time to do so—how to dry and pack in the most methodical way, and so that the plant will be presented in the best possible condition and command a good sale. Market reports are watched and wholesale and retail prices given. The students themselves actually do the bedding-out and take care of the beds, so that they can watch the progress of each plant. In this way the different methods of tending the various plants are learnt and practical knowledge as well as theoretical is gained. The first illustration serves to indicate the way the system of instruction is organised.



Photo.] [*Clarke & Hyde.*

Studying in Section C.

The plant-nursery is divided into sections distinguished by letters of the alphabet, and the students work through the different sections systematically. The letter C which the student bears is an indication that she is specially studying that section. The second photograph shows students being taught the method of propagating peppermint-plants. The young plants are protected from the sun by flower-pots, but these are removed so that the plants



Photo.] [*Clarke & Hyde.*

Propagating Peppermint-plants.

can receive the benefit of dew and rain. The students are all women of the better class, and, although they undertake the whole of the work, Mrs. Grieve would not be averse to receiving voluntary help from pharmacists who could assist in trenching, in erecting a much-needed drying-shed, and in advice as to the demand for and methods of disposing of the various medicinal plants.

"Guide to Preliminary Examinations."—Deals with English, Latin, arithmetic, algebra, Euclid, French, and German as required in the principal examinations recognised by chemical, medical, and pharmaceutical bodies. Price 2*s.* 6*d.* net, by post 2*s.* 10*d.*, from the *C. & D.* Book Department, 42 Cannon Street, London, E.C., or leading wholesale houses.

Trade Report.

The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers receive the goods into stock, after which much expense may be incurred in garbling and the like. Qualities of chemicals, drugs, oils, and many other commodities vary greatly, and higher prices than those here quoted are charged for selected qualities of natural products even in bulk quantities. Retail buyers cannot, therefore, for these and other reasons, expect to purchase at the prices quoted here.

42 Cannon Street, E.C., August 17, 5.30 p.m.

The month of August is usually a quiet one in the chemical and drug markets, and this year is no exception to the rule. In pharmaceutical chemicals the undertone (apart from a few products which are genuinely scarce) remains "weak," this being due to the desire of sellers to unload, and in such a market buyers are more prudent when placing their orders. Among the chemicals which have weakened are acetic acid, acetanilide, cocaine, lead acetate, salol, bismuth salts, formaldehyde, and hyposulphite of soda. Citric and tartaric acids and cream of tartar are all lifeless. Bromides are selling at last week's prices. In drugs and essential oils gentian, squill, and manna are easier. Bergamot and spike lavender oils, cloves, quillaia, and shellac are dearer.

Higher	Firmer	Easier	Lower
Bergamot oil	Camphor (Jap. ref.)	Acetyl-salicylic acid	Acetanilide
Cloves	Linseed oil	Bismuth subnit.	Acetic acid
Coriander-seed	Nutmegs	Citric acid	Cacao-butter
Cubeb oil	Turpentine	Cottonseed oil	Cassia lignea
Mace (W.I.)		Cream of tartar	Celery oil
Quillaia		Gentian	Chillies
Rosemary oil (Sp.)		Manna	Cocaine
Shellac		Pimento	Coconut oil
Spike lavender oil (Sp.)		Salicylates	Lead acetate
		Soda hypo.	Salol
		Squill	
		Tartaric acid	
		Wood oil (spot)	

The Drug-auction will be held next Thursday, August 24.

Cablegram.

New York, August 16.—Business in drugs is fair. Peppermint oil in tins is higher at $1.90. Gentian has been reduced to 20c., and hydrastis (golden seal) is dearer at $5.00. Buckthorn-bark is lower at 35c. Senega has been advanced to 48c., while copaiba balsam is lower at 60c. Cascara sagrada is steady at 7½c., and menthol is unchanged.

Acetanilide.—Sellers of U.S.P. on spot quote 4*s.* 6*d.*, and 3*s.* 6*d.* to arrive.

Acetic Acid is lower, 80 per cent. pure in casks offering at about 110*l.* per ton, and glacial at about 220*l.* to 225*l.*

Acetyl-salicylic Acid is offering at from 33*s.* to 35*s.* per lb. upwards, being easier.

Alum.—Makers are practically off the market owing to the inability to obtain raw materials. Second-hands quote from 20*l.* to 25*l.* per ton.

Anise Oil (Star).—Slow of sale on spot at 3*s.* 5½*d.* per lb. for "Red Ship."

Arrowroot.—At auction 300 barrels common St. Vincent sold at 2½*d.*

Barbitone is rather dearer, offering at from 75*s.* to 77*s.* 6*d.* per lb. as to seller.

Bergamot Oil has sharply advanced, several shippers asking 20*s.* to 25*s.* c.i.f.

Bichromates.—Small lots are offered by dealers at 1*s.* 10*d.* to 2*s.* for *Potash* and 1*s.* 4*d.* to 1*s.* 6*d.* for *Soda*.

Bismuth Salts.—Dealers offer *Subnitrate* at the lower rates of 10*s.* 10*d.* to 12*s.* per lb., and *Carbonate* at from 11*s.* to 11*s.* 6*d.* per lb. *Subgallate* to arrive shortly is offered at 15*s.* 9*d.*

Bromides.—The position remains substantially unaltered. Importers have made sales of several ton-lots of potassium bromide at about 5*s.* 9*d.*, and quote about 6*s.* for 1-cwt. lots, and higher in proportion for smaller quantities.

Cacao-butter is 2*d.* to 3*d.* cheaper; at auction 500 cases *Fry's* offered, and 75 sold at 2*s.* per lb.

Camphor (Refined).—The spot-price of Japanese slabs is 2*s.* 6*d.*; this price is also asked for 1-oz. tablets, and ¼-oz. offer at 2*s.* 4*d.* Forward offers are few, ¼-oz. tablets for February-March shipment being quoted at 2*s.* 4*d.* c.i.f. Slabs have been sold at 2*s.* 3½*d.* c.i.f. for August-September shipment, and sellers now ask 2*s.* 4½*d.* c.i.f. for September-October. English bells have been selling at 2*s.* 4*d.*, but this price is now nominal.

Capsicums.—At auction 276 bales Bombay were bought in at from 42*s.* to 45*s.* for medium and large stalky red.

Caraway Oil.—In view of the prohibition of exports from Holland, prices are very firm at 13*s.* 6*d.* for double-rectified Dutch.

Cassia Lignea.—At auction 1,450 cases sold without reserve at from 46*s.* to 47*s.* for fair selected, being lower; 50 cases China *Cassia Buds* were bought in at 70*s.*

Castor Oil is steady at 49*l.* per ton for English firsts in barrels for September-December delivery; values of good seconds Calcutta are from 4½*d.* to 4⅝*d.* per lb. in Liverpool. Finest medicinal Italian in cases is about 97*s.*

Celery Oil.—The cheaper prices of seed enables the English makers to lower the price to 65*s.* per lb.

Chillies.—At auction 256 bags Japanese sold without reserve at much lower prices, including fine red at 85*s.* to 89*s.* and good red 80*s.* to 83*s.*; four bags fair bright Nyasaland sold at 125*s.*

Cinchona.—At the London auction on Tuesday 973 packages offered and only partly sold; 204 bales East India were practically all bought in; six bales Ceylon sold at 5½*d.* for red root, and of Calisaya 629 packages offered, of which about 400 sold at 1*s.* to 1*s.* 1½*d.* for good quill, and 1*s.* 6½*d.* for good flat; 103 bales West African were bought in at 10*d.* for thin quill.

Citric Acid is a flat and easier market at about 3*s.* to 3*s.* 1*d.* per lb.

Clove Oil.—With the further advance in cloves and the continued higher cost of production, makers are not keen sellers at from 5*s.* 10*d.* to 6*s.*

Cloves.—Zanzibar are dearer, with spot sales at up to 7¼*d.* per lb. and buyers. The sales for delivery include October-December at 7 7/16*d.* to 7 15/32*d.* to arrive; July-August shipment is quoted 7*d.* c.i.f. buyers.

Cocaine.—A few permits to trade have been granted by the Home Office to recognised agents; from 19*s.* 6*d.* to 21*s.* 6*d.* per oz. is quoted for hydrochloride and to arrive at 18*s.*

Cod-liver Oil.—Newfoundland medicinal oil is weaker at the source, exporters offering at from $80 to $90 per barrel; offerings have been more liberal. The production in Newfoundland according to trade authorities will show a heavy increase this season.

Copper Sulphate is unaltered at from 48*l.* 10*s.* to 49*l.* per ton for the usual Liverpool brands.

Coriander-seed is dearer, 23*s.* per cwt. having been paid for wormy Morocco and 25*s.* for fair sound.

Cream of Tartar is lifeless, 98-per-cent. powder offering at 187*s.* 6*d.*, and 99 to 100 per cent. at 190*s.* per cwt.

Creosote Carbonate is easier at from 35*s.* to 40*s.* per lb.

Cubeb Oil.—The scarcity and dearness of good oily berries makes the oil now worth 25*s.* per lb.

Eucalyptus Oil.—The arrival of delayed shipments is now taking place from Australia, and very fair quantities have been received. Spot prices are from 2*s.* 4*d.* to 2*s.* 5*d.* per lb. as to test.

Fenugreek-seed.—Sales are reported of new-crop Morocco for shipment at 17*s.* 6*d.* per cwt. c.i.f. terms. The price on the spot for small lots is 19*s.* per cwt.

Gentian.—In view of arrivals prices are easier, whole offering at 90*s.* per cwt. on the spot, and for forward shipment about 77*s.* 6*d.* c.i.f. is quoted.

Honey.—Very fair arrivals of Chilian have taken place in Liverpool. Fine Cuban can be had on spot at 50*s.*, good San Domingo at 45*s.*, and ordinary 32*s.* 6*d.* per cwt.

Hydroquinone is offered to arrive at 25*s.* per lb.

Lead Acetate.—White is offered at rather lower rates in view of the recent fall in acetic acid; 90*s.* to 92*s.* 6*d.* is now quoted.

Lemon-juice.—The price of English raw is about 2*s.* 3*d.* per gal. on the spot.

Lime-juice.—In moderate demand, raw Jamaica offering at 3*s.* 6*d.* and Dominica at 3*s.* per gal.

Lime Oil.—West Indian distilled is offering at 8*s.* per lb. and a trifle less for quantity; hand-pressed is 9*s.*

Liquorice-juice.—Italian block is offered at from 170*s.* to 178*s.* 6*d.* per cwt. net c.i.f. London, war risk extra, and *sticks* at from 180*s.* 6*d.* to 189*s.* per cwt. on the same

terms. These prices are somewhat above the spot parity. Italy appears to be the only source of supply at present.

Manna.—Importers quote finest flake at 5*s.* 6*d.* and roots at 2*s.* 4*d.* c.i.f. London.

Menthol.—Quiet at 10*s.* 6*d.* per lb. spot for Kobayashi-Suzuki. October-November shipment has been sold at 10*s.* 3*d.* per lb. c.i.f., and oil is quoted at 3*s.* 4½*d.* c.i.f.

Mercurials.—Corrosive sublimate is offered at 6*s.* to 6*s.* 3*d.* per lb. to arrive and calomel at 7*s.* per lb. from importers. It is now easier to ship from Italy.

Milk-sugar remains firm and scarce at 165*s.*, both on spot and to arrive.

Nutmegs.—At auction 267 packages West Indian sold at an advance of 1*d.* to 1½*d.* per lb. Much higher prices were paid for West Indian *Mace*, of which 150 packages sold.

Oils (Fixed).—*Linseed* is dearer on the week at 38*s.* 3*d.* in pipes on spot and 39*s.* 3*d.* in barrels. *Cottonseed* is easier at 38*s.* 9*d.* for crude in pipes on spot, 43*s.* 3*d.* to 43*s.* 6*d.* for refined in pipes, and 52*s.* to 53*s.* 6*d.* for sweet refined in barrels. *Rape* is firm; ordinary brown naked on spot is nominal at 40*s.*, British defined in barrels is 43*s.* to 50*s.*, and Japanese in cases 39*s.* 6*d.* c.i.f. for August-September shipment. *Coconut* is cheaper at 49*s.* 6*d.* for Ceylon in hogsheads on spot and 47*s.* 6*d.* in pipes. Cochin on spot is 50*s.* to 52*s.*, and London pressed is 41*s.* per cwt. Hankow *Wood* oil is 51*s.* 6*d.* spot and 48*s.* 6*d.* c.i.f. *Soya* is steady at 37*s.* 6*d.* c.i.f. for August-September shipment; Hull crushed is 41*s.* 6*d.*, and extracted 38*s.* Lagos *Palm* is 40*s.* on spot, and 33*s.* 9*d.* in Liverpool.

Orange Oil.—Sicilian on the spot is quoted at 10*s.* 6*d.* to 10*s.* 9*d.*, and to arrive at 10*s.* 6*d.* to 11*s.* per lb. c.i.f.

Paraldehyde is offered at from 10*s.* to 11*s.* 6*d.* per lb. spot according to holder.

Pepper.—At auction 153 bags Tellicherry were bought in at 9*d.* to 9½*d.* and 154 bags Singapore at 8*d.*; 40 bags Ceylon sold at 7⅞*d.* to 8¼*d.* for greyish to fair, and nine bags Mangalore at from 11½*d.* to 1*s.* 0½*d.* for fine bold; privately the spot price of fair black Singapore is 7 15/16*d.*; *White* was not offered at auction; privately fair Singapore is quoted at 9¾*d.* and Muntok 9⅞*d.* spot.

Peppermint Oil.—American tin oil is rather dearer from New York at 8*s.* 10*d.* c.i.f.

Pimento.—At auction 56 bags sold at from 2¾*d.* to 2⅞*d.* for fair, being easier.

Podophyllum Resin is selling at 12*s.* 6*d.* per lb. for U.S.P. powder on spot.

Potash Carbonate.—Further arrivals of Russian have taken place; 85 to 90 per cent. can be had at from 125*l.* to 130*l.* per ton.

Potash Permanganate is very irregular, varying from 6*s.* 6*d.* to 7*s.* 6*d.* per lb. according to holder.

Potashes.—The tendency of Montreal is still easier, with no substantial change in the values given last week.

Potato-starch.—At auction 1,000 bags Japanese were bought in at 25*s.* per cwt.

Quillaia is dearer at from 40*s.* to 42*s.* 6*d.* per cwt. in Liverpool as to quality, of which three grades appear to be available.

Resorcin.—A limited quantity is offered at from 115*s.* to 120*s.* per lb. net.

Rosemary Oil.—Spanish is dearer at about 2*s.* per lb.

Salicylates have an easier tendency. Sodium salicylate American powder is quoted 11*s.* to 11*s.* 6*d.*, and salicylic acid varies from 8*s.* 6*d.* up to 14*s.* per lb., the latter for finest crystals.

Salol is offered at 25*s.* per lb. on the spot, and slightly less for delivery next month.

Senega.—Spot sellers quote 2*s.* 4*d.* net and to arrive 2*s.* 3*d.* c.i.f.

Shellac.—Spot prices have advanced a further 7*s.* per cwt., closing at 126*s.* to 127*s.* for fair standard TN quality. Fine Orange is quoted at 140*s.* to 145*s.*, AC Garnet 115*s.*, and GAL 105*s.* per cwt. spot.

Soda Hyposulphite is easier owing to the reduction in freights. Pea crystals offer at 15*l.* to 16*l.* per ton in kegs or barrels, and ordinary at 13*l.* 10*s.* to 14*l.* 10*s.* ex wharf London.

Spike Lavender Oil.—*Spanish* is rather dearer at from 2*s.* 6*d.* to 2*s.* 9*d.* per lb. on the spot. *French* is worth 4*s.* to 4*s.* 6*d.*

Squill.—Tending easier, fair to good white offering at from 60*s.* to 65*s.*, and brown at 57*s.* 6*d.* on the spot.

Tartaric Acid is very irregular at from 2*s.* 10*d.* to 2*s.* 11*d.* per lb., with isolated sales by "outsiders" at less money.

Terpine Hydrate.—For parcels due shortly 2*s.* 1*d.* is quoted, spot being held at 2*s.* 6*d.*

Turpentine closes at 42*s.* 6*d.* per cwt. for American on spot, and 43*s.* for September-December.

Continental Drug and Chemical Markets.

The following notes chiefly refer to the Hamburg and Berlin markets under date of July 22 and 27:

Agar-agar has again been commandeered on behalf of the army, so that only very small quantities are available at m.20 to m.21 per kilo.

Ammon. Chloride has again been advanced by makers on account of extreme scarcity and higher prices for raw material. From m.135 to m.140 is quoted for c.p., from m.125 to m.130 for 98 to 100 p.c. crystals, from m.110 to m.115 for 70 to 75 p.c.

Borax and Boric Acid.—The united makers in Germany have informed their customers that the German borax-industry will be able to meet all the demands during the war and subsequent to the war. The Government has taken measures to obtain raw material from Turkey; it is not known, however, when the first consignments will arrive. Prices are therefore expected to become lower; they now vary between m.530 and m.540 per 100 kilos. for crystals, m.550 and m.560 for powdered, m.750 and m.760 per 100 kilos. for nearly c.p. boric acid, and m.760 and m.770 nearly chemically pure powdered boric acid. Chemically pure boric acid must be paid m.10 higher.

Bottles have again been advanced by from m.1 to m.3 per hundred.

Bromides cannot be procured in sufficient quantities, as the demand is extremely active and raw material scarce. Consequently prices are higher again; m.200 has been paid for potassium, m.240 for sodium, and m.260 for ammonium.

Camphor (Refined).—Commandeered camphor is offered at from m.10.50 to m.11 per kilo. Synthetic camphor, which is not commandeered, is not obtainable.

Caraway-seed is higher again, in consequence of active demand and prohibition of exports from Holland; price is now from m.240 to m.245 per 100 kilos.

Carragheen Moss has been imported in large quantities *viâ* neutral countries, though many difficulties had to be surmounted. Prices are very high, but good quantities have met with a ready sale. Pale natural carragheen of good quality is from m.370 to m.380 per 100 kilos. now; out and dried must be paid from m.395 to m.410.

Cassia-flowers are getting even more scarce, so that very high prices must be paid. First quality is quoted at from m.470 to m.475 per 100 kilos.

Citric Acid is higher as the demand has increased suddenly; the price is from m.15.50 to m.16 per kilo. and will go still higher.

Cloves.—*Zanzibar* are in very active demand, and consequently prices have advanced. First Zanzibar are quoted at from m.495 to m.500 per 100 kilos. now.

Cod-liver Oil.—In consequence of the prohibition of importation, genuine medicinal cod-liver oil of really good quality is almost unobtainable in Germany. Only second-hands is offered in small quantities at from m.800 to m.850 per 100 kilos. The War Committee for the distribution of fixed oils and fats furnishes medicinal cod-liver oil at m.800, and cod-liver oil for technical purposes at m.700 per 100 kilos. It takes a very long time, however, before orders are executed, and, moreover, there is no guarantee whatever that the quality asked for has been sent.

Oils (Essential).—Russian *Anise* oil is no longer to be had; German is higher in price at from m.27.50 to m.28.50 per kilo. The demand for *Star-anise* has fallen off at m.16. *Bergamot*, first Reggio, is expected to advance considerably, as imports are practically impossible; prices vary from m.49 to m.51 per kilo. for 35-per-cent. Dutch *Caraway* has enormously advanced in price, because of the high price of seed and the difficult conditions under which it must be bought. Twice rectified oil is from m.35 to m.36 per kilo. *Clove* is higher in consequence of the high prices that have to be paid for cloves; from m.34 to m.36 per kilo. is quoted. *Eucalyptus* cannot be imported, so that the inland stocks have much diminished; globulus is almost unobtainable, and very small quantities, containing from 75 to 80 per cent. of eucalyptol, are still to be had at from m.15 to m.16 per kilo. *Fennel* is also getting very scarce, and as Galician fennel cannot be expected, prices are advancing continually; from m.25 to m.26 per kilo. is quoted, but prices are expected to advance. *Lemongrass* is offered at m.9.50 per kilo., but the demand has quite fallen off. *Patchouli* is now m.80 per kilo. American *Peppermint* can with difficulty be imported, so that the prices have an advancing tendency. *Siberian Pine-needle* is still obtainable at m.8 per kilo.; *Pomeranian* is m.35 per kilo.

Opium.—Firmer reports come from Turkey; from 11 to 12 per cent. has been sold at m.52, and 10 per cent. at m.50 per kilo.

Quillaia.—Quotations for cut are about 20 per cent. lower, as large quantities of whole have been offered of late. It is generally expected, however, that the prices will soon advance again, as the inland stocks are only small,

and rumours say that parcels which are on their way to Germany will not be allowed to be exported from neutral countries.

Potass. Carb. has again been advanced by the makers, in consequence of extreme scarcity of raw material. White, 80 to 85 per cent., is m.70; 90 to 95 per cent., m.75; granulated white, m.80; c.p. D.A.B. V., m.110 per 100 kilos.

Potash Ferrocyanide.—Makers have for the greater part quite cleared their stocks, and even sold their entire production for the remainder of 1916; from m.158 to m.160 per 100 kilos. is asked.

Arrivals of Chemicals, Drugs, etc.

The following is a selection of arrivals during the period from August 9 to 15, inclusive, in the English ports named. Goods in transit are not included. The figures refer to the packages—*e.g.*, cases, bags, barrels, boxes, kegs, etc. The weights, when known, are specified:

To London.

Acetic acid (N.Y.) 110 brls.
Albumen 133 cs.; *egg-yolk* 655 cs. 440 cks.
Aloes (Cape) 5
Ammon. fluor. (N.Y.) 15 brls.
Ammon. phosph. (U.S.A.) 102
Angier's emulsion (Boston) 2,532 bxs 32 brls.
Anilin colours (Fr.) 67 cks.
Antim. ore 8,560
Arachis oil 300 cks.
Argol (Sic.) 242
Arsenic 34 cks.
Barium sulph. 2,363
Benzoin 50 cs.
Bismuth ore 77 bgs. 9 cks.
Boric acid (It.) 313 brls.
Bromides (Boston) 60 cs.
Bromo seltzer (N.Y.) 720 cs.
Calamus-rt. (N.Y.) 6
Calc. citrate (It.) 47 cks.
Calc. carbide (Swed.) 1,800 dms.
Calcitone 36 dms.
Capsicums (E.I.) 15
Caraway-seed 25
Cascarila 6 bls.
Casein (B'bay) 224
Cassia-bark 14
Castor oil (Ital.) 200 cs.
Castor-seed (Del. Bay) 83
Chemicals (Fr.) 54 cks. 109 pkgs. 20 hmprs., (Swed.) 21 cs., (U.S.A.) 50 cs.
Chemicals and drugs (N.Y.) 30 pkgs.
Chiretta 27
Citric acid (Palermo) 200 kgs.
Cochineal 28
Coconut oil 272 brls. 98 pkgs. 3,000 cs.
Copra 28.737 bgs.
Cream of tartar (Palermo) 20 kgs.
Drugs, undescribed (Boston) 237 bxs., (Melbourne) 50 dms., (R'dam) 13 bls.
Dye-stuffs (Boston) 37 cs.
Ergot (Port.) 10
Essential oils (Sic.) 38 pkgs. 75 cs., (N.Y.) 15 cs., (Ch.) 25 cs., (Fr.) 11 cs.
Eucalypt. oil 3 brls. 3 dms. 781 cs.
Gelatine (Fr.) 20 cs.
Glucose 60
Glycerin (Amst.) 40 dms.
G. acacia (B'bay) 275
G. copal 95 cs. 290 bkts.
G. damar 50 cs. 332 bgs.
Hexamine (N.Y.) 10 pkgs.
Honey (St. Lucia) 95 cs., (Fr.) 12 cks.
Illipe-nuts 2,323
Juniper-berr. 401 bls.
Kola (W.I.) 9
Laurel-leaves (It.) 75
Lemon-ju. (It.) 10 pps.
Lime-juice 22 cks.
Lime oil 9 cs.
Linseed (E.I.) 14,507 bgs.
Liquorice (It.) 159 cs.
Liquorice-rt. (It.) 48 bgs.
Listerine (N.Y.) 540 cs.
Logwood 45 tons
Mace 78 pkgs.
Manna 8
Milk-sugar (Amst.) 100 cs.
Nutmegs 600 bgs. 42 brls. 75 cs.
Nux vom. 1,000
Olibanum 132 cs.
Olive oil (It.) 98 cs. 29 cks. 73 bxs. 103 pps. 25 ½-chts., (Fr.) 12 cs.
Orris (Itay.) 25
Papain 14 cs.
Pepper 5,169
Peppermint oil (R'dam) 10 cs.
Perfumery (Fr.) 45 cs.
Perfumes (A'dam) 18 cs.
Petroleum emul. 4,716 bxs. 80 ½-brls.
Potash, undescribed (C'cutta) 57 cs.
Quinine (A'dam) 10 cs.
Roots, barks, herbs, etc. (N.Y.) 36 bgs. 44 pkgs.
Saltpetre 6.856 bgs.
Shellac 275 cs. 50 bgs.; *button* 27
Soda caustic (N.Y.) 66 dms.
Soda pruss. (A'dam) 20 cks.
Squill 106
Sticklac 155
Sulphur (Sic.) 4,747 brls. 2,350 bgs.
Tamarinds (E.I.) 125, (Barb.) 370
Tartaric acid (It.) 496 brls. 54 cks.
Thorium nit. (N.Y.) 22 bxs.
Tragacanth (B'bay) 46
Turmeric 1,400
Wax, bees' (E.I.) 53 bdls., (Del. Bay) 16, (B'bay) 78 cs., (C'cutta) 50 bdls. 30 cs.

To Liverpool.

Ammon. nit. 102 cks.
Aniline oil (N.Y.) 73 dms.
Antim. ore 10,435 pkgs.
Arachis oil 4.000 cs.
Babassu-kernels 1,427 bgs.
Balsams (Maranham) 9 brls., (N.Y.) 50 cs.
Barytes 420
Bismuth ore 369
Cinchona (Mollindo) 256 bls.
Calc. acetate 380
Capsicums (W.C. Af.) 13
Chillies (W.C. Af.) 124
Cloves (N.Y.) 10 cs.
Cochineal 9
Drugs (N.Y.) 563 pkgs. 14 brls., (Fr.) 36 cs.
Formaldehyde (N.Y.) 56 brls.
Glucose 60 brls.
Glycerin (N.Y.) 4 pkgs.
Honey (Chile) 926 brls.
Lactic acid (Boston) 80 brls.
Mastich 53 cs.
Palm-kern. 21,586 bgs. 627 tons
Palm oil 2.716 cks.
Perfumery (Fr.) 181 cs.
Quebracho ext. 25 tons
Quillaia 907 bls.
Rhatany 265 bls.
Roots, barks, etc. (N.Y.) 17 bls.
Soda nitrate 66,324 bgs.
Thyme oil (Gr.) 5 cs.
Wax, bees' (Boston) 5 cs.
Whale oil 8,152 brls.

To Bristol.—Ground-nuts 920 tons; magnesite 102 bgs.; soda nitrate 29,616. *To Folkestone.*—Drugs (Fr.) 47 pkgs.; perfumery (Fr.) 126 pkgs. *To Goole.*—Aniline colours (Fr.) 163 cks.; phenacetin (Fr.) 10 cs.; phenazone (Fr.) 20 cs. *To Hull.*—Castor-seed (B'bay) 1,494; chemical products (Fr.) 391 bgs.; linseed (E.I.) 79.598 bgs. *To Manchester.*—Ammon. nit. 182 cks.; calcium carbide 8,250 dms.; glucose 240; phosphorus (Montreal) 250 cs.; soda chlorate (Montreal) 500 kgs.; tannic acid (Montreal) 10 brls. *To Southampton.*—Aniline colours (Fr.) 74 pkgs.

Cocaine Permits.

Permits to purchase cocaine are now being issued. These may be either "general"—that is, giving the right to purchase cocaine itself or any of the preparations containing it—or they may restrict the purchase to certain defined preparations containing cocaine, such as, for example, local anæsthetics. The permit is in the following terms:

In pursuance of No. 40B of the Defence of the Realm Regulations, the Secretary of State hereby grants —— a —— permit to purchase cocaine, subject to the following conditions:

(*a*) This permit shall continue in force until revoked by the Secretary of State, and on revocation shall be surrendered to the Secretary of State.

(*b*) This permit must be produced to the person or firm from whom the cocaine is purchased, and must be endorsed by such person or firm at the time of purchase with particulars of the date of purchase, the quantity purchased, and the form in which purchased, and the signature and address of the person or firm.

(*c*) The holder shall keep a complete record of all purchases of cocaine in pursuance of this permit showing in respect of each purchase the date of purchase, the quantity purchased, the form in which purchased, and the name and address of the person or firm from whom purchased. This record shall be open for inspection by any person authorised for the purpose by the Secretary of State.

(*d*) The holder shall furnish to the Secretary of State such returns of his purchases as may from time to time be required.

(*e*) The holder shall mark each package or bottle containing any article manufactured by him into the composition of which cocaine enters with the amount and percentage of cocaine in the article.

Form to be filled in by the person or firm from whom cocaine is purchased by the holder of this permit:

Date of Purchase	Quantity of Cocaine Purchased	Form in which Purchased	Signature of Person or Firm from whom Purchased and Address

The permit is accompanied by a letter in the following terms:

"I am directed by the Secretary of State to forward to you, in accordance with your application, a general permit under the Defence of the Realm Regulation 40B to purchase cocaine in this country, subject to the conditions specified in the permit. These conditions must be strictly observed; any failure to comply with them will be an offence against the Defence of the Realm Regulations, and may also entail the revocation of the permit.

You are reminded that under the Regulation sales can only be made by you

(1) To duly qualified medical practitioners, registered dentists, registered veterinary surgeons, persons, firms, or bodies corporate entitled to carry on the business of a chemist and druggist, and licentiates of the Apothecaries' Hall in Ireland.

A temporary authority has also been given by the Secretary of State to all persons *bona fide* engaged on the 28th July, 1916, in practising dentistry but not registered under the Dentists Act, 1878, to purchase preparations containing not more than 1 per cent. of cocaine adapted for use as local anæsthetics in connection with dental work. This authority remains in force till the 15th October next only.

(2) To persons holding a general or special permit from the Secretary of State to purchase cocaine, which permit must be produced to you at the time of purchase, and must be endorsed by you with the particulars of the purchase.

I enclose a copy of the Order prescribing the record which you are required to keep of all dealings in cocaine effected by you."

(Particulars regarding this record were published in The Chemist and Druggist, August 5, p. 43.)

In making applications for permits the applicant is required to "furnish particulars of the average amount of cocaine purchased and the firms from which, and the forms in which, purchases were made." "No licence is required under the Regulation for selling cocaine, but sales can only be made to 'authorised persons,' as defined in the Regulations, or to persons for whom it has been duly prescribed. Unregistered dentists are temporarily permitted, up to October 15 only, to purchase preparations containing not more than 1 per cent. of cocaine adapted for use as local anæsthetics in connection with dental work."

Correspondence

Letters for this section should be written on one side of the paper only. The writer may adopt an assumed name for purposes of publication, but he must in all cases furnish his real name and address to the Editor.

An Ungenerous Taunt.

Sir,—The enclosed cutting is quoted in a local paper from the London "Truth," and I should be glad if you will let me tell chemists how undeserved is the taunt contained in it:

> When war broke out the Governors of the East Africa and Uganda Protectorates had to improvise their defence forces as best they could by using such local material as was available at the time, without waiting for help from India. The medical departments came off worse than others because civil practitioners were few and far between, and the Governors had to go into the byways and ditches of the Protectorates to rake in anyone they could lay hands on to fill vacancies in the commissioned ranks. Much to his surprise, a Mombasa chemist suddenly blossomed into a full-blown assistant surgeon, while an elderly gentleman, a dispenser at Nairobi, was dug out of his shop and gazetted as a lieutenant in the Uganda Medical Service. I hope General Smuts has brought a good supply of surgeons with him from South Africa, for he can get no help from the Protectorates.

Be it noted that the Medical Departments have sufficient staff to deal with the population of the country in normal times, consequently when war broke out and that population volunteered for active service the Medical Department even then were little or no worse off, for not only did Government doctors go on active service, but all the private practitioners volunteered to a man. The same may be said of the chemists. There was no rake required, nor did a byway or ditch need to be searched. Incidentally the simile does not read well, for one does not associate British East Africa with down-at-the-heel or "waster" folk such as might be inferred from the words of "Truth." Of the chemists who volunteered the Medical Department took three men. Mr. Stobo, of Kampala, Uganda, was one, and the firm employing him shut up that branch until a relief man could arrive—a journey of 400 miles, half land and half water. Mr. Stobo is still with the Uganda Medical Service as sergeant-major. The other two were Messrs. White and McGeorge, both of Nairobi, who were sent out as first-aid men and given the rank of sergeants. Mr. White was attached to a company of King's African Rifles, but ere the arrival of more troops and help he had to return to civil life for business reasons. Mr. McGeorge was attached to the East Africa Mounted Rifles, and experienced all the hard campaigning that unit had in the early stages while keeping the enemy from our border. His duties, carried out under the instruction of the regimental medical officer, were chiefly looking after the well-being of sick and wounded in camp until they could be convoyed across a stretch of seventy or eighty miles to a railway. In one of the early "scraps" he was in charge of the native stretcher-bearers and dressers, to render first-aid and send back casualties to the dressing-station from the firing-line. Later Mr. McGeorge was attached to an ambulance, where he was able to relieve the medical officer of the hundred-and-one minor details which ambulance-work entails when a column is on the march—such sort of work as most chemists could ably do, and so leave the medical officer free to do the more important work. From the ambulance he was attached to an outpost, garrisoned with 100 Indians and about 200 native carriers, and for the purpose of establishment was known as an assistant surgeon—a qualification entirely Indian. Its chief virtue seems to be that one who has qualified as such is allowed independent charge in India. Mr. McGeorge has been in sub-charge of the hospital-train for the past six months, and has recently been given the commission of lieutenant in the East Africa Medical Service. There never has been, nor is there now, any lack of doctors for the forces engaged. When we had our own troops only we had our own doctors. When the Indian Expeditionary Force came they brought their own doctors. The South Africans have their own doctors, while many more have arrived, and all have been supplemented by the R.A.M.C.

Yours faithfully,

Nairobi, B.E.A. E. M. (45/34.)

Resorcin in Ointments.

Sir,—How should resorcin be dispensed when ordered in ointments? Should it be finely powdered and mixed *secundum artem* with other ingredients, or should it first be dissolved? What is most suitable as a solvent? I have often heard customers say that ointments containing resorcin occasioned great pain, and in cases where the resorcin was dissolved smarting was caused. The "Art of Dispensing" does not throw light on the problem. Water is not a satisfactory solvent, because it is not dense enough for a body so easily oxidised as resorcin; the same objection applies to alcohol. It is true that oxidation may be delayed by making the aqueous solution acid, as in the case of the isomers of resorcin, hydroquinone, and pyrocatechin. Water is also undesirable as a solvent, since watery bodies when mixed with fats, etc., are likely to be absorbed through the skin, and the action of resorcin is required to be superficial only. Glycerin as a solvent is not satisfactory, but we know from past experience (ung. acid. carbol., '98) that glycerin is not an ideal liquid to mix with a fatty base, or with paraffin ointment. It is very rare to find a doctor who knows anything about the chemistry of resorcin, and when asked for their opinion on this substance, most doctors now declare that it is useless, or that it does more harm than good. Most bodies having crystalline structure when mixed with an ointment-base and applied to the skin, especially to a raw patch, cause pain, even boric acid in ung. acid. boric. The easiest way out of the difficulty is to advise doctors to order menthol, camphor, or phenol with the resorcin, for with either of these it forms a liquid which mixes well with any commonly ordered base. On p. 97 of the "Art of Dispensing" a useful table appears which shows at a glance when a liquid results from rubbing solids together. Menthol particularly has a cooling and comforting effect in skin-complaints. I should like also to ask whether oxidised resorcin is any good? Oxidised pyrogallol is much less irritating than pyrogallol. Why not oxidised resorcin? The danger of absorption is also removed.

Yours truly,

C. W. Kemsey-Bourne.

255 High Street, West Bromwich.

Subscribers' Symposium.

For interchange of opinion among "C. & D." readers, and brief notes on business and practical topics, especially new ideas.

Belgian Remedies.

M. Leon Maertens, referring to the list of Belgian galenicals given in the *C. & D.*, August 12, p. 48, points out that the ingredient in Species Laxantes "spirituous extract of senna" should read "Senna-leaves previously extracted with strong alcohol" by percolation. The matter yielded to the spirit contains the extractives to which the griping action of senna is due. This spirituous liquid is rejected and the senna dried and broken into small pieces. The words "Pastilles de saliniæ" should read "Pastilles de Salmiac."

Judex (121/91) writes: "Attracted by the list of galenicals from the Belgian Pharmacopœia which you give in the *C. & D.*, August 12, p. 48, I took down my copy of that work, which is of an earlier date. I came across a formula for 'Pasta Phosphorata' with the following note attached:

> 'N.B.—Hæc pasta ad animalia nocentia destruenda utilis est.'

Yes, I thought, there are other worse noxious animals in Belgium at the present moment. The Allies are dealing out to them more drastic remedies than phosphorus paste, which all the civilised world hopes will soon rid that gallant little country of the greatest pest the world has ever seen."

Legal Queries.

The majority of difficulties in regard to trade law are explained in the legal section of "The Chemist and Druggist Diary," 1916, beginning on page 341.

Excise (30/25).—You are misinformed in regard to large medicine-labels not being printed any longer. They are.

Satisfied (41/31) employs an assistant, at present at college, who upon his own application was granted exemption from military service until the end of October to enable him to sit for his examination. Will "Satisfied" be entitled to apply to the Tribunal for the assistant's exemption after October? ["Satisfied" should make his application to the Tribunal before the assistant's present period of exemption expires.]

Miscellaneous Inquiries.

W. M. T. (259/32) and *J. A. B.* (36/25).—Liquid Floor-polish.—See *C. & D.*, August 21, 1915, p. 60.

G. F. G. (6/65).—Cinema-theatre Perfumes.—The following is the model upon which you could found a series of perfumes for use in cinema theatres:

Lavender oil	2 oz.
Bergamot oil	½ oz.
Rose-geranium oil	1 oz.
Formalin	1 oz.
Spirit to make	16 oz.

For use mix 1 oz. with 40 oz. of water. We are not aware of any synthetic perfumes that have been devised for this purpose, but there is no reason why you should not work out some formulæ. Amyl salicylate gives a trefoil or orchid odour, anisic aldehyde that of hawthorn, benzyl acetate that of jasmin or ylang-ylang, bornyl acetate gives a pine odour, cinnamic alcohol that of hyacinth, ionone that of violets, etc. There are many hints on the compounding of synthetic perfumes in "Pharmaceutical Formulas."

W. S. T. (31/58).—Metric conversion equivalents are given in the Pharmacopœia.

W. K. (35/30).—Books on Chiropody.—Hughes's "Manual of Chiropody" (Wyman, 2*d.*); Wagner's "Handbook of Chiropody" (Osborne, Garrett & Co., 5*s.*).

H. & H. (35/8).—There is no modern French-English technological dictionary which deals specially with chemical terms. The larger general French dictionaries cover the greater number of the terms used in chemistry.

Statim (30/34).—We are unable to trace your original inquiry.

Kathos (91/19).—The Aristotelian Elements were fire, air, water, earth, and "ether." The last-named was also called "essence" or "quintessence." These have nothing in common with the chemical elements of the present day, but were accepted as the simplest forms of matter by the alchemists down to the time of Boyle.

S. F. H. (43/4).—(1) Bellier's Test for Arachis Oil in Olive Oil.—Mr. E. J. Parry gave the following details in the *C. & D.*, April 1, 1911:

Solutions required: (1) An 8.5-per-cent. solution of pure caustic potash in absolute alcohol; (2) acetic acid of such strength that 1.5 c.c. will neutralise 5 c.c. of the alkali solution; (3) 70-per-cent. alcohol (by volume) containing 1 per cent. of hydrochloric acid (sp. gr. 1.16). One gram of the oil is saponified with 5 c.c. of the alkali and neutralised with acetic acid. Cool the mixture to 20° C., and add 50 c.c. of the acid 70-per-cent. alcohol. A clear, or at most opalescent, solution will be formed in the absence of arachis oil. The liquid should be allowed to stand for an hour at 20° C., and if 10 per cent. of arachis oil be present a distinct crystalline precipitate separates; if 5 per cent. be present, a distinct precipitate separates which is easily seen to be crystalline under the microscope.

(2) Wense's and Caspari's Perchloric Test for Potash.—The reagent employed is perchloric acid, sp. gr. 1.125, equal to 19.57 per cent. of $HClO_3$. It should not give a reaction with barium chloride, and should mix with an equal volume of alcohol (96 per cent.) without turbidity. The method of using is as follows:

13.4525 grams of the substance is dissolved in water, converted into chloride by adding 3 to 4 c.c. of a solution of normal barium chloride containing hydrochloric acid, and made up to 500 c.c., so that 20 c.c. of the solution contains 0.5381 gram of the salt. If the salt contains more than 1 per cent. of SO_3 it is advantageous to precipitate it at this stage: 20 c.c. of the solution with 5 to 6 c.c. of perchloric acid is evaporated in a glass or blue-enamelled porcelain basin until the odour of hydrochloric acid has disappeared and fumes of perchloric acid begin to form. The residue is allowed to cool, and then is added about 20 c.c. of 96-per-cent. alcohol containing about 0.2 per cent. by weight of $HClO_4$. The residue is thoroughly disintegrated, washed several times with alcohol, saturated with potassium perchlorate at the washing temperature, and decanted into a filter. Finally the precipitate and filter are washed with a minimum quantity of alcohol to remove the perchloric acid which would otherwise blacken the filter. The filter is then dried at 120°-130° C., and weighed. One milligram of $HClO_4$ corresponds to 0.1 per cent. KCl.

R. T. B. (45/43).—Our impression is that as lecithin is commonly extracted from egg-yolk by hot solvents such as acetone, the lecithin is not decomposed when eggs are boiled. We know of no authoritative statement on the subject.

A. W. B. (45/58).—Skin-creams.—We treated this subject rather fully in a series of articles in The Chemist and Druggist in the month of April 1909, and these were subsequently embodied in "Pharmaceutical Formulas." The developments in this subject since that date have been relatively unimportant.

F. W. (15/8).—Freezing-mixtures.—One of the most effective, and also cheapest, freezing-mixtures is prepared by mixing powdered sodium-sulphate crystals (16 parts) with hydrochloric acid (12 parts). The reduction of temperature is to about —33° C. A mixture of crushed ice and salt is also effective. The cream or milk to be frozen is placed in an earthenware container and the whole immersed in the freezing-mixture, but special freezing-apparatus is sold for the purpose. We cannot say how much of the freezing-mixture will convert a gallon of milk into ice. This depends partly upon other conditions than the freezing-mixture—*e.g.*, the initial temperature of the substances used.

W. H. M. (146/26).—The "animal fat" in the paste-form of infants' food is doubtless butter, introduced as cream.

F. E. W. (44/3).—Particulars are given in this number as to obtaining instruction suitable for passing the examination as dispenser to an apothecary (see p. 52).

C. D. L. (Chios) (30/32).—(1) Mastic.—Although the mastic-plant grows in other places than the island of Chios, it does not appear to be systematically collected elsewhere. Another variety of mastic comes from India, and is known as Bombay mastic, but is inferior to the Greek resin. A mastic-like resin is also obtained in Brazil and used for the preparation of varnishes. (2) The uses of mastic outside pharmacy are few, and it can hardly be said to be indispensable. We believe it still finds a use in Turkey as a masticatory, and to a small extent it is employed in microscopic varnish and dental varnish. (3) Mastic Wound-dressing.—The following are substitutes for mastisol:

I.		II.	
Mastic	20 parts	Powdered mastic	200 parts
Colophony ...	20 parts	Colophony ...	100 parts
Castor oil ...	3 parts	Venice turpentine	70 parts
Methyl salicylate	1 part	Linseed oil ...	5 parts
Benzol	56 parts	Wintergreen oil	1 part
		Benzol	500 parts

J. F. (15/8).—(1) Warts on Dog's Gums.—The best treatment is to paint the warts for several days running with a strong solution of salicylic acid, when most of the warts will soon disappear. Clip off those that remain with a small pair of scissors or sharp knife, dressing the places with tinct. ferri perchlor. (2) Worms in Dogs.—In the circumstances you will be safe in giving six doses of worm-powders, following the course by a slight purge. (3) Shampoo-powders:

Dried sodium carbonate... ...	3iss.
Dried curd soap	3iss.
Solution of orange aniline dye a sufficiency	

One powder is used with a pint of water as a shampoo.

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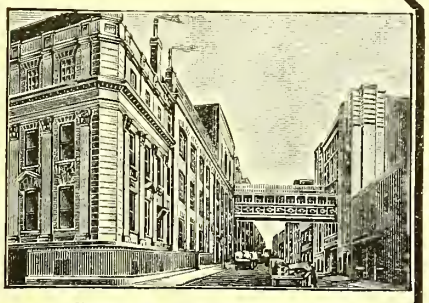
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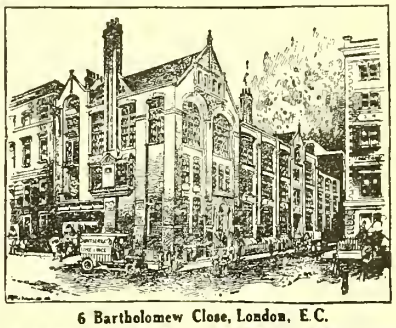


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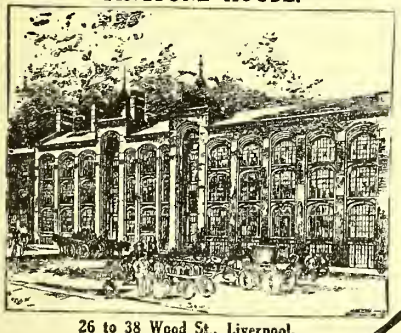
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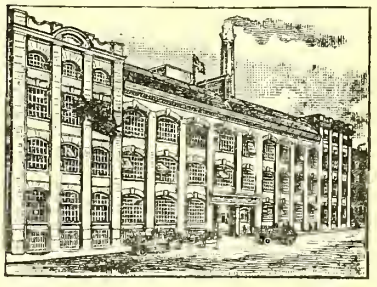
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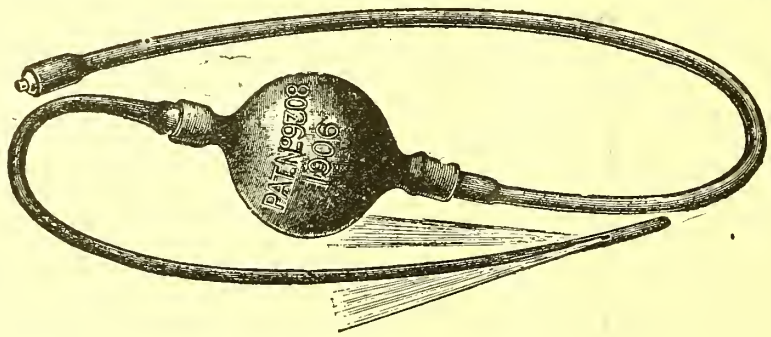
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AN IDEAL ANTISEPTIC DEODORANT DISINFECTANT.

Contains 20% more Cresol than any other similar preparation.

Superior to any German Preparation.

Surgical Instruments can be safely sterilised and disinfected in a few seconds without danger of corroding by using "Detergol."

USED BY THE MEDICAL PROFESSION FOR FOURTEEN YEARS.

TABLETS, PILLS, etc., and CHEMICAL and MEDICINAL PREPARATIONS of all descriptions

MANUFACTURED BY

HOUGH, HOSEASON & CO.

Wholesale Manufacturing Chemists ***MANCHESTER.***

Contractors to H.M. Government.

THE CHEMIST & DRUGGIST SUPPLEMENT.

OFFICE: 42 CANNON STREET, E.C. SATURDAY, AUGUST 19, 1916.

TO ADVERTISERS IN THIS SUPPLEMENT.

The Publisher desires to make it clear that advertisements of Businesses for Disposal and Wanted, Situations Open and Wanted, Exchange Column, &c., **MUST BE PREPAID** (except in the case of serial advertisers), and to ensure prompt insertion **REMITTANCES MUST ACCOMPANY INSTRUCTIONS.**

Advertisements for the current issue cannot be received after 4 p.m. on Thursday in each week. If it is necessary to telephone or telegraph an urgent announcement this may be done **PROVIDED the MONEY is TELEGRAPHED** at the same time and the fact made clear that the money order is to be delivered at 42 CANNON STREET, LONDON, E.C. Advertisers will assist greatly in the preparation and quick despatch of the Supplement by making careful note of these rules. **Telephone: No. 3617 Central (3 lines). Telegraphic Address: "Chemicus Cannon London."** (Three words counted as two.)

BEST RESULTS EVERY WEEK!

This is what advertisers in The Chemist and Druggist Supplement secure. Not indefinite returns from spasmodic and inflated circulation, but regular, steady success—the best possible in the Drug Trade. It gives

THE PUBLICITY IT PAYS TO PAY FOR.

CHEMISTS' TRANSFERS.

Messrs. ORRIDGE & CO., 56 Ludgate Hill, E.C.

Telephone Number: City 2283.

May be consulted at their Offices on matters of SALE, PURCHASE, and VALUATION.

1.—HUNTS.—Unopposed Business; returns £825; *good profits*; comfortable residence, with bathroom and offices, flower and kitchen gardens; rent £25; price £400.

2.—ISLINGTON.—Ready-money Business; good position in main shopping thoroughfare; returns between £900 and £1,000; *profits above the average of Retail trade*; price about £325.

3.—LONDON, S.W.—Established Business, Retail and Dispensing; held by vendor many years; returns £1,000 yearly; *profits above the average of Retail trade*; capital opening for modern trading; terms, value of stock and fixtures.

4.—SUSSEX (in the heart of the Country).—Retail and Dispensing; all good-class business; returns £825; *net profit over* £300 (proof given); full investigation permitted; price £650.

5.—LONDON, S.E.—Family Retail and Dispensing Business; no Panel; established many years; returns show a steady increase, last year's turnover being about £1,000; *net profit* £300; attractive shop, double-fronted; rent £45; comfortable residence, with garden; price about £650.

6.—OXFORD STREET (Few Doors From).—Attractive shop, capitally situated; returns, present rate, £12 weekly; scope for considerable development under good management; lock-up Pharmacy; long lease; price £500.

7.—NORTHERN SUBURB (Middle-class Suburb).—Brisk ready-money Business, situate in shopping thoroughfare; returns about £1,100; *net profit* £450; price about £600.

8.—BRISTOL CHANNEL (Health Resort).—Neglected Business; returns about £500; excellent opening for a pushing man; terms, valuation of stock and fixtures.

9.—WILTS.—Retail and Dispensing, with Wines and Spirits; established many years, and held by vendor about 28; returns last year £1,562; good-sized house, with garden attached; terms, goodwill £50, stock and fixtures by valuation.

10.—SURREY (Within Easy Distance of London).—Dispensing and Retail; all good middle-class business; returns £1,000; *net profit between* £250 and £300; good position in close proximity to railway station; price about £700.

11.—INLAND WATERING-PLACE.—Established Business, Dispensing and Retail; returns upwards of £3,000 per annum; vendor would consider a Partnership with a view to the incomer taking up the whole within a given period.

12.—SOUTH WALES (Large Town).—Retail and Dispensing, together with Wines; returns £1,500; excellent premises, situate in main thoroughfare; vendor desires to take up an appointment, and for a quick sale will accept the value of stock and fixtures.

13.—SUSSEX (High-class Watering-place). — For Disposal, through death, good-class Dispensing Business, with Opties; returns between £1,400 and £1,500, present rate less; *profits above the average*; further details on application.

14.—SOUTHERN COUNTY.—Unopposed Business, very old-established; returns about £850; *net profit exceeds* £250; exceptionally good residence, with garden and outbuildings; price £400; this is much below market value.

VALUATIONS FOR STOCKTAKING.

Messrs. O. & Co. desire to emphasize the necessity of a Periodical Statement of Account, by which means alone Profit, the value of Business, &c., can be determined. Involving as this does the labour of Stocktaking and Valuation, it is often omitted, and eventually becomes the cause of **confusion and loss.**

Messrs. O. & Co. are prepared to undertake these essential duties, and will make Special Terms for such services.

ORRIDGE & CO., 56 LUDGATE HILL, LONDON, E.C.

PARSON C. BAKER

Pharmaceutical Chemist,

TRADE VALUER AND TRANSFER AGENT.

Recommended by British Drug Houses, Ltd.; Meggeson & Co.; Barclay & Son.
Tel. No.: FINCHLEY 812.

VALUATIONS, ESTIMATIONS, EXAMINATIONS, AND FULL REPORTS, Town or Country, on moderate terms.

No charge whatever to vendors or purchasers except by agreement.

Personal Attention to every detail.

40 years' Valuation experience.

CORRESPONDENCE INVITED.

1 MOUNTFIELD RD., CHURCH END, FINCHLEY, N.

THOS. TOMLINSON & SON

CHEMISTS' VALUERS, TRANSFER AGENTS, AND EXPERT STOCKTAKERS,
45a MARKET STREET, MANCHESTER.
ESTABLISHED OVER HALF A CENTURY.
Telegraphic Address: "Tomtom."

We desire particularly to draw the attention of Colonial and Foreign Subscribers to the fact that in cases where they require partners, agents or assistants, or wish to sell their businesses, an advertisement in this Supplement, placed in every copy of "The Chemist and Druggist," should be the readiest means of helping them to attain their object. The tariff for such announcements is given under the appropriate headings in the Supplement. Instructions and remittances can be sent to us direct or through the advertisers' correspondents in this country.

BERDOE & FISH

VALUERS & TRANSFER AGENTS,

35 Jewry Street, Fenchurch Street, City.

Telephone: 1809 CENTRAL.

NO CHARGE TO PURCHASERS.

1.—BANKS OF THAMES (Death Vacancy).—Good-class Chemist's Business, with Optics; returns last year over £1,850; good profits; attractive, well-fitted shop, fine position, and fully stocked; scope for increase; price about £1,000, bare valuation; strongly recommended.

2.—WEST OF ENGLAND.—Old-established good-class Country Retail; returns approach £4,000; net profit about £1,000; splendid position; market town; fine premises; owner retiring; price £2,500; splendid chance for two smart men.

3.—NORTH WALES COAST.—Unopposed Light Retail; returning £500, at good profits; rent only £15; up-to-date Pharmacy, fully stocked; price £200, or valuation.

4.—SUSSEX COAST (Rising Town).—Well-established Light Retail Business, in good unopposed position; returns about £650; scope for increase; net profit £180; splendid house, nice garden; price only £275.

5.—MIDLANDS (Death Vacancy).—Light Family Retail and Agricultural, in pleasant market town; easy hours; returns £900; net profit £300; good opening for Photo and Optics; one other Chemist; price £425, or first reasonable offer.

6.—LONDON, S.E.—Working Partner required in good middle-class suburban business; returning £1,000, no Panel; fine position; good residence; price for half share £370; incoming Partner's share of profits would exceed £200 a year.

7.—NORTH LONDON.—Good middle-class Retail; pleasantly situated; returns £850; attractive shop; good stock; price £300 or valuation; personally inspected and recommended.

STOCKTAKINGS.

Appointments for stocktakings and valuations should be made early. Full particulars and terms sent on application.

Why you should have stock taken is very clearly defined on page 135 of the *C. & D. Diary* for this year. Have you read it?

BUSINESSES FOR DISPOSAL.

3s. 6d. for 50 words or less; 6d. for every 10 words or less beyond, prepaid.

The **Advertiser** may, if preferred, have replies addressed to this Office, and forwarded on payment of an additional charge of **6d.**

Price-lists, trade circulars, samples, and printed matter can in no case be forwarded, the Box numbers being intended exclusively for specific answers to particular advertisements. The Publisher reserves the right to open and refuse to forward any communications received which he may consider contrary to this rule.

TRADING WITH THE ENEMY AMENDMENT ACT, 1916.
In the matter of Wagner Bros., Merchants and Dealers in Surgical Instruments, Dental Materials, and Druggists' Sundries.

FOR Sale, as a going concern, this old-established Business successfully carried on by the Proprietors.
The Stock-in-Trade, Utensils, and Fixtures can be taken over at a valuation, or a cash offer will be entertained.
The book debts can be assigned if desired, and a reasonable offer for the Goodwill considered.
Bona-fide purchasers can obtain further information by arranging a personal interview with the Controller, A. C. Bourner, Chartered Accountant, Bushlane House, Cannon Street, E.C.

BRADFORD.—Old-established Light Retail Drug Business for Disposal at once; main thoroughfare, near Town Hall; reason, age and illness; good opening for Panel. Particulars from "S. H.," 113 Bridge Street, Bradford.

GLOUCESTER City.—For immediate Disposal, owing to illness and advanced age, old-established Business; returns over £1,300; well-fitted corner shop; good house and garden; stock and fixtures over £1,000; price £650. Full particulars, 152/40, Office of this Paper.

HALIFAX.—Returns three years, £530, £566, £600; in growing suburb; sell for value of stock and fixtures; splendid opportunity to acquire sound business cheap; special cash price for immediate sale; no opposition; Wine Licence. Apply, J. Savage & Co., 254 Manchester Road, Bradford.

LEICESTERSHIRE.—Light Retail; returns £750, increasing; good opening for Dental and Optics; fixtures at valuation (about £100), stock optional; bargain for immediate sale. 155/31, Office of this Paper.

LONDON, S.E.—Death vacancy.—Well-stocked Business for Sale; large N.H. Insurance Dispensing; good opportunity for an active man. Apply to Mr. H. Pellew (Executor), 374 Old Kent Road, S.E.

LONDON, S.W.—Drug Stores; good investment; a sound little Business; good middle-class; returns show a steady increase; up-to-date stock; nice shop, house contains 6 rooms, bath, scullery; garden, side and back entrance; valuation stock and fixtures, about £175 to £200; no Photo, Optics or N.H.I. "Bargain" (154/7), Office of this Paper.

MANCHESTER.—Wholesale Drug Business; 50 years' reputation; good opening for energetic man; premises (freehold), stock, fixtures, book debts, and goodwill at valuation, about £2,000; bona-fide buyers only. Apply, 127/23, Office of this Paper.

SOUTH London Suburb.—Genuine Business, Cash Retail; large well-fitted shop; good house; returns £1,500, net profit £400; price valuation and small goodwill. Apply, 152/11, Office of this Paper.

WEST HARTLEPOOL.—By Executors.—Old-established Retail and Dispensing Business; modern fitted shop, with residence above; cheap to speedy purchaser, to wind up estate; well stocked; splendid opportunity. Apply, Emerson, 105 Thornton Street, West Hartlepool.

OLD-ESTABLISHED Country Business, with Wine Licence, for Sale in a good market town; plenty of scope for increase in the hands of a qualified man; nice shop with a good house, capable of quick recovery and considerable extension; about £200 will purchase; rent £50. "Sparks" (155/19), Office of this Paper.

UNOPPOSED Country Retail, South-East Midlands; returns over £800, at good prices; same hands over 40 years; nice shop, well fitted and stocked; exceptionally good house; warehouses and garden; rent £25; price about £400. 155/150, Office of this Paper.

£100.—For immediate Disposal, old-established Retail; most central position, main road; tremendous large neighbourhood; excellent opportunity for large Panel connection; good Prescribing; takings could be more than doubled by qualified man; rent £35 yearly inclusive; owner compelled to join Forces reason sacrifice; no offer considered after August 23. 155/25, Office of this Paper.

£50 DOWN.—Owner of neglected Country Retail, only recently acquired, and capable of good profitable turnover, being unable to give necessary attention, will dispose at great sacrifice to suitable man; handsome, well-fitted shop, small stock; house and garden attached; price only £100, or near cash offer. 155/15, Office of this Paper.

LEGAL.

IN THE MATTER OF TRADING WITH THE ENEMY AMENDMENT ACT, 1916, AND IN THE MATTER OF M. MEZGER & COMPANY, of 34 BLOOMSBURY SQUARE, W.C., Agents and Dealers in Surgical Instruments and Hospital Furniture.

BY an Order of the Board of Trade under Section I. (1) of the above-mentioned Act, dated the 31st day of July, 1916, I, ERNEST NORTON, Chartered Accountant, of 3 Crosby Square, in the City of London, a member of the firm of Edward Moore & Sons, was appointed to control and supervise the carrying out of the above Order, and to conduct the winding-up of the said business.

NOTICE IS HEREBY GIVEN that the CREDITORS of the above-named firm are REQUIRED on or before the 30th day of September, 1916, to SEND their NAMES and ADDRESSES, and the particulars of their debts and claims, and the names and addresses of their Solicitors (if any), to me the undersigned, as Controller of the said firm, at my address as aforesaid; and, if so required by notice in writing from me, are, by their Solicitors or personally, to come in and prove their said debts as claimed at such time and place as shall be specified in such notice, and in default of complying with the requirements of this notice they will be excluded from the benefit of any distribution made before such debts are proved.

Dated this 14th day of August, 1916.

ERNEST NORTON, Controller.

PARTNERSHIPS.

ADVERTISER desires Partnership in a Merchant's business dealing in Drugs, Chemicals, or Produce, etc. Write "D. P. 886," c/o Deacon's, Leadenhall Street, E.C.

GENTLEMAN requires small share in Wholesale Druggists' Sundries or Patent Drug House Agency where energy and experience would lead to further development. 152/15, Office of this Paper.

MERCHANT wishes to meet gentleman who thoroughly understands the Merchantry of Produce, Drugs, or Chemicals, etc., with the view of adding Department on profit-sharing basis. Write "M. R. 887," c/o Deacon's, Leadenhall Street, E.C.

PREMISES TO LET.

TO Wholesale Traders and Others.—To be Let a newly-erected Building of 3 floors and basement, measuring 25 ft. by 70 ft., with heating apparatus and electric light throughout; would be divided to suit tenants at low rents. Apply, D. Swyers, Rutland House, Beer Lane, Gt. Tower Street, E.C.

FOR SALE.

ENTIRE Fixtures of Shop.—Fixtures mahogany, plate-glass fronts, mirror backs and glass shelves to Cases and Counter; about 250 Shop Rounds, Recess Labels, Jars, etc., 2 Swan-necked Carboys. Jefferson, 33 Lonsdale Street, Carlisle.

FOR Sale, 14 lb. Ac. Tart. Xtals.; 4 lb. Gum Styrax Prep.; 2 lb. Ext. Ipecac. Liq. Rio, Standardised; 2 lb. Hydrarg. Oxid. Nig.; 1 lb. Gum Tragacanth Elect.; ¼ lb. Ext. Colchici Acet.; ¼ lb. Resorcin Pulv.; 3 gross Cork Feeding-bottles; 14 lb. Pulv. Ac. Tart. First best offers for cash. "Chemicus" (154/36), Office of this Paper.

SELF-ADDING Cash Till, Second-hand, Secret Total and Strip Printing Device; cheap. Appointment by post only, "Till," Estate Office, St. Mary's Mansions, Paddington, W.

SODA Fountain, Matthew's Calosado, with or without monitor. Write Plews, Chemist, 14 Basinghall Street, E.C.

BUSINESSES WANTED.

ADVERTISER is desirous of purchasing quite a small Pharmacy or Drug Store; London suburbs preferred (Post Office not objected to); good house and garden. Reply to "Drugs" (155/27), Office of this Paper.

BUSINESS wanted, London or suburbs, returns from £700 to £1,500. Full particulars, in confidence, "Wilson" (153/37), Office of this Paper.

DRUG Store or Business with little N.H.I. wanted immediately, London or suburbs; must be profitable and offer scope for improvement; £75 deposit and balance by arrangement; a neglected business in good position might suit. Give net profit and particulars Terri, 31 Fieldway Crescent, Highbury, N.

SMALL Business, about 30 miles radius of Manchester; healthy district; price about £200 to £450; or Branch Managership with or without view to succession; abstainer; 43; highest references; moderate salary for comfortable permanency. Particulars, in confidence, to "Confidential" (154/28), Office of this Paper.

WANTED, Light Retail and Dispensing Business; turnover about £700 per annum; must have good living accommodation; Liverpool district preferred; or Managership at reasonable salary with view to early succession. Apply, with fullest particulars in first letter, to "Confidential" (151/25), Office of this Paper.

TO LET.

TO Let at Michaelmas, old-established Chemist's Shop in small Midland borough; only one other Chemist in district, nearest Company shop eleven miles; no stock or fixtures to take to; goodwill free; exceptional opportunity caused by death of tenant. Apply, 151/29, Office of this Paper.

AGENCIES.

Price-lists, trade circulars, samples, and printed matter can in no case be forwarded, the Box numbers being intended exclusively for specific answers to particular advertisements. The Publisher reserves the right to open and refuse to forward any communications received which he may consider contrary to this rule.

AGENCIES wanted for Liverpool district for Tablets, Lozenges, Toilet Preparations, Manicure, etc., Perfumes, Soaps, Salines, etc. "Dependable" (155/14), Office of this Paper.

FIRM with offices Tokyo and London offers services on commission for purchase of Japanese Drugs and Chemicals, Druggists' Sundries, Glassware, Bottles, etc., or will act as Factor; samples of requirements if possible; large quantities only; references exchanged. Apply, "F. W. H." (138/34), Office of this Paper.

SITUATIONS OPEN.

3s. 6d. for 50 words or less; 6d. for every 10 words or less beyond, prepaid.

The **Advertiser** may, if preferred, have replies addressed to this Office, and forwarded on payment of an additional charge of **6d.**

RETAIL.

BIRMINGHAM.—Locum, unqualified, to take charge for seven or eight days in September; live in preferred; light duties. State full particulars and salary, including railway fare, to A. Jagger, 166 Cambridge Road, Smethwick, Birmingham.

BRIGHTON.—Required, Senior unqualified Assistant for good middle-class business; quick Dispenser, good Salesman; indoors preferred, but not essential. Give full particulars and photo if possible. References will not be communicated with until terms are arranged. Savage, Pharmaceutical Chemists, Brighton.

BRIGHTON.—Wanted in September, outdoor Assistant, with good Dispensing experience; ineligible. Apply, with full particulars and salary required, to J. Miller, 4 Victoria Road, Brighton.

BRISTOL.—Junior (ineligible) required for Light Cash Retail in pleasant suburb; good salary for smart Salesman. Please state full particulars, with recent photo, to Stokes, Chemist, Bristol.

BURSLEM.—Assistant, ineligible for military service, for Country Wholesale and Retail; outdoors; single; short hours; must be a good Salesman; state age, height, and experience, with references and salary required, Thos. Leicester, Chemist, Burslem.

CAMBRIDGE.—Wanted at once, Locum for one month. Apply, S. F. Barker, 46 Chesterton Road, Cambridge.

CHELMSFORD.—Wanted at once, a capable Assistant; non-eligible; well up in Dispensing, Counter work, and Photography; hours easy; send reference, salary required, and all particulars; must be total abstainer. Apply, Manager, 31 High Street, Chelmsford.

CHELTENHAM.—Assistant for Dispensing business. Apply, with full particulars, Thomas Bros., Montpellier, Cheltenham.

COLCHESTER.—Experienced Assistant wanted at once; ineligible or discharged from military service; good salary to suitable man. Apply, W. Edes Everett, Ltd., St. Botolph's Pharmacy, Colchester.

DARLINGTON.—Managing Assistant required; abstainer preferred. Apply, stating age, height, experience, and salary required, to Waters, Chemist, Darlington.

KENT.—Old-established firm have a vacancy for smart young lady; must be a good Dispenser and have had some experience at the Counter; permanency, with progressive salary. "Kent," (155/283), Office of this Paper.

LANCASHIRE.—Qualified Manager required for suburban business near large industrial centre; business has been well managed, and now presents an excellent opportunity for North Country man anxious to settle down; must be married, of good character, and possess energy and ability; liberal interest in the profits given. "A. R." (155/280), Office of this Paper.

LIVERPOOL.—Wanted, qualified Manager, ineligible, or lady capable of taking complete control, for Branch in industrial Lancashire town; N.H.I. and general Retail. Apply, Welch, Pharmacist, Freshfield, near Liverpool.

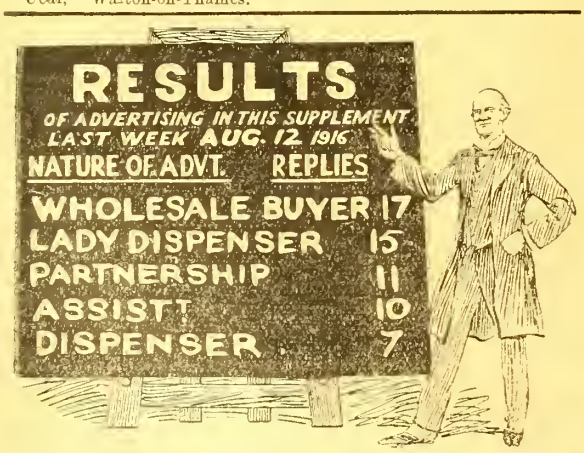
LONDON HOMŒOPATHIC HOSPITAL, Great Ormond Street, W.C.—Applications are invited for post of Lady Assistant to the Dispenser at this Hospital; candidates must possess the Minor qualification. Applications, stating salary required, with copies of not more than three testimonials of recent date, must be delivered to the Secretary by August 22nd.

LONDON, N.W.—Locum or experienced Assistant required for one week during September; indoors. Apply, with references, and stating full particulars, to "Tannigin" (154/19), Office of this Paper.

LONDON, S.E.—Manager, qualified or otherwise, for Prescribing business; permanency. Reply, stating age and salary required, to "Damascus" (155/7), Office of this Paper.

LONDON, S.E.—September or October, Assistant, qualified, married, with a view to partnership or succession, for a good-class Dispensing business; abstainer preferred. Please state salary required, full particulars, to 156/32, Office of this Paper.

LONDON, S.W.—Qualified Manager with Sight-testing knowledge wanted for good-class business; must be exempt from military service; to reside on premises; interest in business offered to suitable applicant. Write, giving details and salary required, to "Ucal," Walton-on-Thames.



This Blackboard demonstrates that Advertisers using these columns get a ready response to their announcements. The figures only refer to some of the letters RECEIVED AT OUR OFFICE on behalf of Advertisers who use a number or nom de plume.

LONDON, S.W.—A competent Assistant; ineligible or beyond the military age; outdoors. Apply, with full particulars in first letter, or personally, to "A. W.," c/o Alsop & Quiller, 137 Sloane Street, S.W.

LONDON, S.W.—Wanted, a qualified Assistant. Apply, with full particulars, to Amoore & Co., 173 Sloane Street, S.W.

LONDON, W.—Competent Assistant wanted immediately; ineligible; outdoors. Apply, Rouse & Co., 12 Wigmore Street, W.

LONDON, W.—Capable Assistant wanted; qualified; good salary for suitable man; outdoors. Apply, stating usual particulars, to John Atkins, Chemist, 109 Queen's Road, Bayswater, W.

MANCHESTER.—Wanted at once, Locum Tenens or temporary Junior, for about a fortnight. State terms, etc., to Butcher & Simmons, 329 Chapel Street, Salford.

MANCHESTER.—Qualified man for Brauch; permanency to a good Salesman. Please send full particulars to "Chemist," c/o Quilliam & Co., Victoria Bridge, Manchester.

MANCHESTER.—Unqualified Assistant as soon as possible; good Dispenser and Counterman; must be ineligible. State salary required, references, and when at liberty, to 155/6, Office of this Paper.

NEAR Manchester.—Wanted immediately, qualified Assistant; exceedingly easy position; easy hours; suit elderly man; no Sunday duty; half-day weekly; principally N.H.I. work; applicants must have good references. Full particulars and salary required (outdoors), to Wardle's Drug Stores, Ltd., 28 & 30 Egerton Street, Moses Gate, near Bolton.

NORWICH.—Unqualified outdoor Assistant, not over 35, required for Shop Counter and making Preparations; experience and good references essential; hours easy; duties light. Terms, reason for exemptiou and full particulars, to Nuthall & Mason, Norwich.

SALISBURY.—Unqualified Junior Assistant, outdoors, permanency, either sex, required immediately. Full particulars to Atkins & Son, Pharmacists, Salisbury.

SOUTH OF ENGLAND.—Assistant required; experienced; permanency, with good salary. Timothy White Co., Ltd., Chemists, Portsmouth.

SOUTHEND-ON-SEA.—Competent, reliable Assistant, ineligible for Army, for Dispensing and Counter; permanency; can occupy furnished rooms above premises, if married no accommodation for children. Full particulars, interview preferred; Manager kept; Mr. Holloway, Pharmacist, Southend-on-Sea.

SOUTH HANTS.—Required (September), young qualified Locum or Assistant for Retail, Dispensing, Photographics; outdoors; hours 8.30 a.m. to 8 p.m.; no Sunday duty; country town. Send references, salary required, and all other particulars, to "H." (154/22), Office of this Paper.

SOUTHPORT.—Qualified Manager for Branch, with good-class Retail and Dispensing experience; lady, or gentleman ineligible for Army; salary and commission. Age, experience, references, salary required, and full particulars, to J. R. Cave, Ltd., 52 Nevill Street, Southport.

TO SAVE TROUBLE.

MANY correspondents answering advertisements in this Supplement enclose remittances to cover the cost of forwarding their letters to advertisers who prefer to be addressed c/o this Office. The Publisher desires to make it clear that this is quite superfluous, and perhaps this reminder will obviate the necessity of the frequent return by him of such remittances.

ANSWER IN TERMS OF THE ADVERTISEMENT AND

REMEMBER you are one of possibly hundreds applying for the same position. Put your case before the advertiser so that he may be able to form a MENTAL PICTURE of your suitableness.

BE BRIEF BUT CLEAR.—Millions of applications are consigned to the waste-paper basket UNCONSIDERED, because the reader cannot form this picture from the inadequacy of the materials set before him.

RETURNING PHOTOS, Etc.

Advertisers in this Section who receive portraits and copies of testimonials from applicants with a stamped addressed envelope for reply are reminded that the undue retention of these often means a hardship to the sender. All personal documents should be returned as promptly as possible after perusal.

STOCKTON-ON-TEES.—Wanted, qualified Chemist as Branch Manager; thoroughly reliable; references from last two employers; salary required and when at liberty. Apply to Milburn's, Ltd., 95 & 97 Northumberland Street.

A COMPETENT Assistant with good experience of Dispensing; must be ineligible for military service; outdoors. Full particulars to W. H. Hampton, 86 Northgate Street, Gloucester.

A COMPETENT, trustworthy Assistant needed for good Dispensing and Retail business. W. Pickard, 3 West Kensington Terrace, W., opposite West Kensington Station.

A GOOD-CLASS smart Store requires an Assistant for Counter and Dispensing; must be capable and businesslike and have good references; unqualified; lady or gentleman. If writing, send full particulars, enclosing photo, to Frank Ullett, Pharmacist, 198 Rye Lane, Peckham, S.E.

AN Assistant for Branch, single-handed; trade small and light; could be easily improved; apply, with fullest particulars, salary, age, experience, and reference; vacancy end of month. "Euthymol" (155/190), Office of this Paper.

ASSISTANT wanted for high-class Dispensing business. Particulars of experience, age, height, and salary, to W. Hill, c/o J. G. Barnes & Son, 205 Knightsbridge, S.W.

ASSISTANT in Surgical Instrument business for Front shop; must be accustomed to Instruments or Deformity work; address, stating age, abilities, and wages expected. Reply 136/6, Office of this Paper.

ASSISTANT required immediately; ineligible; outdoors. Apply, with full particulars as to experience and salary required, to R. S. Starkie, 7 Grand Hotel Buildings, Trafalgar Square, W.C.

ASSISTANT with good Dispensing experience wanted immediately; one speaking French preferred. Apply, Manager, Heppell & Co., Hotel Cecil Buildings, Strand, W.C.

CHARLES MIDGLEY, LTD., Exchange Street, Manchester, require an Assistant with good training in superior class business. State age, qualifications, military ineligibility, and salary required.

DISPENSER for evenings, 6 till 9, lady or gentleman, for Doctor's Surgery. Apply, Dr. Anderton Johnson, 428 Liverpool Road, Holloway, N.

DISPENSER required; hours approximately 8.45 to 6, Saturdays one o'clock; no Sunday duty. Write, stating full particulars of past experience, etc., to "L. J. 663," Sells' Advertising Offices, Fleet Street, E.C.

DRUG Store Manager, London, W.; must be smart Window-dresser, good Counterman, and able to increase business, no Sunday duty, for an up-to-date, well-fitted Shop in main thoroughfare. State full particulars, age, salary, and experience, in first letter, which will be treated in confidence, to 48/43, Office of this Paper.

EVENINGS and occasional Sundays, chiefly for Dispensing. Usual full particulars to Brickell & Jones, 295 High Road, Brondesbury, N.W.

EXPERIENCED Assistant, lady or gentleman, for first-class Dispensing business; must be well up in Dispensing; two Assistants kept; to live on premises with housekeeper, or if married good house provided. Applicants please state age, qualifications (if any), and full particulars, H. B. Sharman, Pharmacist, Northwood.

HOSPITAL FOR CONSUMPTION, BROMPTON, S.W.—Dispenser (male) wanted for temporary duty, September 4 to 30; Minor qualification essential; salary offered £2 10s. weekly, with lunch provided. Applications, stating age, experience, Hospital or otherwise, accompanied by two recent testimonials, to be addressed to the Secretary.

IMMEDIATELY.—Assistant, lady or gentleman; well up in Dispensing; lady must have some knowledge of Counter, and gentleman be ineligible; in or outdoors by arrangement; comfortable home and surroundings. Personal interview preferred at any time, if by letter, with fullest particulars, and salary required, photo if convenient, Pelham Young, Pharmacist, Hounslow. 'Phone 153 Hounslow.

IMMEDIATE.—Assistant, unregistered, outdoors, for Light Retail and Dispensing; hours 8.30 to 8.30, with two hours alternate Sunday evenings. State salary required and usual particulars to W. Duty Wells, Yiewsley, Middlesex.

IN the Midlands.—A capable all-round man for good Light Retail and Photographic trade, thus employed. State salary and full particulars to "Permanent" (154/31), Office of this Paper.

JUNIOR Assistant (outdoors), not over 24, required, for Retail and Dispensing business; lady wth Counter experience and Hall qualification not objected to. Address particulars as to experience, salary, etc., and enclose photo (to be returned), to T. Woodruff, Pharmaceutical Chemist, Hazel Grove, Cheshire.

LADY, middle-aged, required, to take Stock at Chemist's Branches in the provinces; experience of trade an advantage; good salary if suitable; permanency. "A. B." (150/33), Office of this Paper.

LADY Assistant required; must be able to Dispense and serve at the Counter. Apply, with fullest particulars, to Parke's Drug Stores, Ltd., 65 Harmood Street, N.W.

LADY Assistant; provinces; good opening; progressive salary; must have had good Dispensing and some Counter experience; permanency. "L/a." (155/28), Office of this Paper.

LOCUM wanted for first two weeks in September; outdoors. Apply, giving full particulars, Price, Chemist, Woking, Surrey.

LOCUM Tenens wanted for a fortnight; unqualified; outdoors. Terms, etc., to Summers, 436 High Road, Streatham, S.W.

LOCUM for Doctor's Surgery and small Hospital, September 2-20 (indoors). State salary, qualification, and references to 154/11, Office of this Paper.

MANAGER wanted shortly in riverside town, qualified, not eligible military service, for Family Dispensing and Agricultural business. Send full particulars by post, Pharmacist, 137 Willesden Lane, N.W.

MESSRS. TIMOTHY WHITE CO., LTD., Chemists, Portsmouth, require a capable Pharmacist (male or female); easy hours; good and progressive salary, with excellent prospects.

MR. J. WEARING, The Central Pharmacy, Woking, requires a competent Assistant; ineligible for military service; desirable situation for a willing worker.

QUALIFIED Assistant to Manage Branch, lady or gentleman; must be well up in Dispensing, etc. Mawson & Proctor, Newcastle.

QUALIFIED Branch Manager wanted at once; good salary to good man. Apply, with fullest particulars, to Parke's Drug Stores, Ltd., 65 Harmood Street, N.W.

QUALIFIED Manager required for an old-established Family Retail and Dispensing business; business is in a very progressive condition, and offers splendid scope to a man of about 46 years of age anxious to take his coat off and do really well; every encouragement given. 155/281, Office of this Paper.

QUALIFIED Manager required for modern business; must be good Counterman and Dispenser; every inducement offered to a first-class man; vacancy in the provinces. 155/282, Office of this Paper.

THOMPSON & CAPPER, LTD., 39 Deansgate, Manchester, have a vacancy for an unqualified Assistant of either sex. Send full particulars and photograph if possible.

WANTED at once for five weeks, qualified Locum. Apply, Secretary, East Suffolk and Ipswich Hospital.

WANTED, qualified Assistant, chiefly for Dispensing. Apply, Pooley, 36 High Street, Wimbledon.

WANTED, elderly qualified Assistant; hours from 11 till 8 p.m. (two hours allowed for meals), Thursdays 11 to 1 p.m. only; salary £2 10s. per week and commission; also Junior or young lady Assistant for Counter. Apply, with full particulars, The Prosser Roberts Co., Pharmaceutical Chemists, 13 Church Street, Camberwell, S.E.

WANTED at once, a Junior or Improver (male) for a good-class Country business; easy hours; no Sunday duty; outdoors. Reply, with usual particulars, to 154/34, Office of this Paper.

WHOLESALE.

Price-lists, trade circulars, samples, and printed matter can in no case be forwarded, the Box numbers being intended exclusively for specific answers to particular advertisements. The Publisher reserves the right to open and refuse to forward any communications received which he may consider contrary to this rule.

DERBY.—Wanted immediately, Assistant for Laboratory; ineligible for Army; good all-round experience. Apply, Davies Sons & Co., Bridge Street Laboratories, Derby.

CAPABLE Chemist required with experience in Manufacture of Pharmaceutical and Toilet Preparations and Perfumery; must be good Manager and supervisor; ineligible; permanency to suitable man. Address, stating age, salary, and experience, to 152/16, Office of this Paper.

CAPABLE Forewoman required, to superintend the Perfumery Department; must be experienced and a good disciplinarian. "London" (47/69), Office of this Paper.

CHEMICAL Works.—Clerk; permanent berth; must have excellent character, quick at figures, and thoroughly experienced in offices of Chemical Works. Full particulars, "R.," Carlton House, Yate, near Bristol.

LOZENGE and Granule Maker required at once. Apply, Manager, Savory & Moore, 143 New Bond Street, W.

MANUFACTURING Chemist required immediately by Dublin Wholesale House; reply, stating full particulars, experience, salary, etc. Apply, 153/19, Office of this Paper.

SHORTHAND Typist required; preference given to one with good experience of the Wholesale Drug trade. Reply by letter first, giving fullest particulars of experience, speeds, salary required, and references, to C. R. Harker, Stagg & Morgan, Ltd., Devon Wharf, Emmott Street, Mile End, E.

THE Wankevell Boracic Sock Co. require Travellers calling upon Chemists, for Line on a commission basis; live men will find this an excellent selling Line. State territory covered, also send reference, to 269 West End Lane, West Hampstead, N.W.

USEFUL man wanted for London Laboratory, Manufacturing Chemists; capable of looking after Receipt and Despatch of Goods preferred. Apply, stating age, experience, and salary required, to 48/41, Office of this Paper.

WANTED, by London house, Assistants for Wet and Dry Counters; also Laboratory hands; non-eligible for military service. Apply, stating age, wages required, and previous engagements, to "Druggist" (48/42), Office of this Paper.

WANTED, Clerk for London firm, permanent, for Invoicing and Ledger work; state age, experience, wages; must be good writer, ineligible, and accurate. Write, "Cephalgin" (155/38), Office of this Paper.

WANTED, qualified man, ineligible, accustomed to the Manufacture of Tinctures, on a large scale, Liquid Extracts, Concentrated Infusions, etc.; must be a good Stockkeeper and able to control men. Apply, Boots, Manufacturing Chemists, Station Street, Nottingham.

WANTED, youth with some Chemical training for Laboratory of Manufacturing Chemists; good opportunity for suitable Junior. Apply, with full particulars, to "C.," Messrs. E. T. Pearson & Co., Ltd., London Road, Mitcham.

WELL-ADVERTISED Patent Medicine.—Travellers wanted to Represent this as a Side Line; commission only. Write full particulars, also territory covered, to Zee-Kol Manufacturing Co., 104 High Holborn, London, W.C.

SITUATIONS OPEN.

(Colonial, Indian and Foreign.)

3s. 6d. for **50** words or less; **6d.** for every **10** words or less beyond, prepaid. The **Advertiser** may, if preferred, have replies addressed to this Office and forwarded on payment of an additional charge of **6d.**

CALCUTTA.—Qualified Assistant, free from military service, for large European House; 4 years' agreement; salary 275 rupees a month, second year 300 rupees per month, third year 325 rupees per month, fourth year 350 rupees per month; second-class passage paid out and home; good opportunity for a smart man. Apply, "G. K.," Evans Sons Lescher & Webb, Ltd., 60 Bartholomew Close, E.C.

NAIROBI, British East Africa.—Qualified Assistant required; exempt from military service; young man who has passed his Minor about three years; agreement for three years; salary £20, £25, and £30 per month respectively; passage paid out and home. Apply "G. K.," Evans Sons Lescher & Webb, Ltd., 60 Bartholomew Close, E.C.

APPRENTICESHIPS.

A FIRM of Chemists require a gentlemanly youth as apprentice to Drug business. Apply, Manager, 287 Caledonian Road, N.

CHEMIST wishes to place sharp boy in brisk up-to-date business; Sunderland or Newcastle district. Full particulars to 153/24, Office of this Paper.

WANTED to apprentice a young lady to a qualified Chemist (lady preferred), with time for reading up. Terms, etc., to "Bon" (153/23), Office of this Paper.

SITUATIONS WANTED.

1s. for 12 words or less; 6d. for every 10 words or less beyond, prepaid.

The **Advertiser** may, if preferred, have replies addressed to this Office, and forwarded on payment of an additional charge of **6d.**

[HOME.]
RETAIL.

A LOCUM; qualified; exempt from military service; 38; excellent references; seaside or country preferred; disengaged September 4. State full particulars to Withnall, c/o Messrs. Milling & Johnson, Chemists, Chester.

ACTIVE Worker, possessing all-round experience in Pharmaceutical, Toilet, Photography, Agricultural, Horticultural, Veterinary. "Ineligible" (156/34), Office of this Paper.

ADVERTISER seeks situation as Manager in good-class business; interest or early succession entertained; thoroughly competent; good salary required; personal interview; 36; ineligible. 156/26, Office of this Paper.

AS Locum; permanency; London, provincial experience; reliable, energetic. "Chemist" (47/49), Office of this Paper.

ASSISTANT; unqualified; ineligible; Midlands preferred; Dispensing Counter; disengaged shortly; country and town experience. "Salol" (153/28), Office of this Paper.

ASSISTANT, unqualified, age 39, ineligible, seeks engagement; disengaged; all-round experience. "Rhei" (154/14), Office of this Paper.

AUGUST 28 to September 9, London, experienced Manager, etc.; 45; unregistered. 153/22, Office of this Paper.

CHEMIST, qualified, ineligible, desires post as Manager, Locum or other capacity; experience and references first-class. Salary and particulars to Ivor, c/o Mrs. Turner, Wakefield Arms, Wakefield.

DENTAL Mechanic and Chemist's Assistant; used to Vulcanite work, N.H.I. Dispensing; married; age 30; exempt; 11 years last place. Hamilton, 31 Buckstone Road, Edmonton.

DISCHARGED soldier, aged 44, married, seeks light outdoor berth, Wholesale, Hospital or Institution, Dispensary Attendant, willing to be generally useful; good all-round knowledge of Drugs; at liberty August 21; temperate, obliging. State salary, "Patriotic," 106 Liverpool Road, Islington, N.

DISPENSER (woman), partially qualified; accurate; good references. Address "M. N.," Rolph's House, Blasford Hill, Chelmsford.

DISPENSER (woman), Hall qualification, experienced, speaks French, requires post in London. Address, Miss Edwards, South View, Farningham, Kent.

DISPENSER (Hall), experienced, desires post with Doctor, will do Locum; disengaged August 26; Coast preferred. Apply, The Surgery, 53 King Street, Blackpool.

DISPENSER requires situation; Hall certificate; ineligible; experienced; S.E. Counties preferred. "Moore" (155/3), Office of this Paper.

EVENING employment or part-time Dispensing or Counter work; Hall certificate; over military age. 151/31, Office of this Paper.

EVENINGS, Saturdays 2 p.m.; qualified; 42; W.C. district perferred. "Pharmacist," 5 Claverton Street, S.W.

LADY Dispenser (Hall) desires post, Hospital or Doctor; disengaged beginning of September. Wood, 13 Stoke Road, Guildford.

LADY Dispenser, experienced, desires part-time post, neighbourhood of Manchester. 153/25, Office of this Paper.

LADY Dispenser (Hall) desires post near South London; experienced, Solomon, Leadhills, Lanarkshire.

LADY Dispenser (Hall), experienced, desires position in Brighton, Doctor, Chemist or Institution. 154/15, Office of this Paper.

LADY Dispenser seeks afternoon employment locally. "M. C." 8 Kingsley Road, Forest Gate, E.

LOCUM, qualified, Photography, Optics, Dentistry, Operating and Mechanics (46), or as Representative for good Wholesale House. Apply, 150/9, Office of this Paper.

LOCUM or temporary (28); free on 28th; Photography, Counter, and quick Dispenser. Offers to "Ineleg," 5 York Street, Plymouth.

LOCUM; qualified; London or near seaside; London and country experience. Herrod, Wisbech.

LOCUM; qualified; 45; disengaged; good experience and references. "J. T.," 128 Uxbridge Road, W.

LOCUM or otherwise; disengaged Saturday. "Aspirin," 37 Upper Kennington Lane, S.E.

LONDON.—Lady desires post as Dispenser; ten months' Pharmacy experience; speaks French; good references. "M.," 1c Elphinstone Road, Hastings.

MANAGER; 45; experienced in Dispensing, Counter, and Photography; single; disengaged; unqualified. "Statim," 578 Smith Riding, Linthwaite, Huddersfield.

MANAGER (43), ten years present post, desires change, with view to succession preferred; country, Wales. 156/17, Office of this Paper.

NOTTINGHAM (or near).—Unqualified; over military age; six years present berth; salary 45*s*. 155/40, Office of this Paper.

NURSE desires post with Doctor for Dispensing, to gain experience for Hall Examination; mornings and evenings would suit. Nurse, 53 Lansdowne Street, Hove, Sussex.

PHARMACIST (28), ineligible, requires good responsible position; 11 years' first-class experience. 152/25, Office of this Paper.

QUALIFIED Manager or Senior Assistant; 28; permanency; good all-round experience; excellent references; Edinburgh or Glasgow preferable. "Lanka" (152/18), Office of this Paper.

QUALIFIED Manager or Assistant; permanency preferred; thoroughly experienced. Davies, Ty. Cwrdd, Llewynhendy, Llanelly.

QUALIFIED; elderly; single; reasonable hours; moderate salary; permanency; London. 155/26, Office of this Paper.

QUALIFIED Manager; 43; Hants district or South Wales preferred. "Active" (155/36), Office of this Paper.

QUALIFIED Manager, view ultimate purchase or partner, South Wales, end September. 155/360, Office of this Paper.

QUALIFIED Chemist has three or four evenings free per week from 6 p.m. Write, "Senior," 49 Wandsworth Bridge Road, Fulham, S.W.

QUALIFIED; ineligible; country; active; good Salesman, Dispenser, Prescriber, and Extractor; not afraid of work; good references; well experienced. 48/52, Office of this Paper.

REGISTERED, small Branch; over military age; Prescriber. Address 309 Park Lane, Little Horton, Bradford.

SITUATION wanted in London; Hall certificate; 30; ineligible; 10 years with Doctors; highest references. 156/1, Office of this Paper.

UNQUALIFIED (43), desires evening work from 6.30; all-round man; quick and accurate Dispenser. Sawyer, 4 Burghley Road, N.W.

LONDON or Suburbs.—Ex-Pharmacist (Minor man), now in Wholesale, needs furnished House or rooms, two to three bedrooms; could give help in off-time. 156/31, Office of this Paper.

WHOLESALE.

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GENTLEMAN, University Graduate, desires post as Sales Manager or charge of Laboratory, Manufacturing Galenicals, Toilet Preparations, Perfumes, etc.; thorough organiser, well up in all branches of Pharmacy and Medicine; has had British and American experience, exploiting Products. 151/32, Office of this Paper.

TRAVELLER, ineligible, experienced, Retail, Wholesale, and Road, desires permanency, Drugs, Sundries or Proprietaries. 155/10, Office of this Paper.

SITUATIONS WANTED.

(Colonial, Indian and Foreign.)

1s. for **12** words or less; **6d.** for every **10** words beyond, prepaid. The **Advertiser** may, if preferred, have replies addressed to this Office, and forwarded on payment of an additional charge of **6d.**

This heading is reserved for assistants seeking situations in the British Colonies, India, and Dependencies, or elsewhere abroad.

ASSISTANT; Spanish; 27; unqualified; healthy; used to foreign Dispensing; good experience and references; speaks French, Spanish, and Italian; married. Write H. Ruiz, 56 Rue de Paris, Vichy, Allier, France.

MISCELLANEOUS.

SHOWCASES and SHOPFITTINGS.—6-ft. Bent Counter Case, 75*s*.; 11-ft. Glass-fronted Serving Counter, £8 5*s*.; Plate-glass Sponge Case, 77*s*. 6*d*.; Perfume Case and Desk, 42*s*. 6*d*.; 6-ft. Wall Case, £8 17*s*. 6*d*. Write for particulars of anything you want. Hundreds of other bargains. PHILIP JOSEPHS & SONS, LTD., 93 Old Street, London, E.C. Established over 90 years.

SECOND-HAND Chemists' Fittings.—We have an exceptionally fine selection of these in all sizes; prices are right, and goods are in first-class condition; we shall be pleased to supply particulars and prices. Call or write, RUDDUCK & CO., 262 Old Street, London, E.C.

CHEMIST'S good second-hand 12-ft. Mahogany Drug Fitting, 6-ft. Mahogany Dispensing Screen and Counter, 4-ft. Mahogany Wall-case, 10-ft. Glass-fronted Counter; Nest of Counter Drawers; Perfumery Case and Desk; 4-ft. Bent Glass Counter Case; the lot £45; bargain; cheapest house for Window Enclosures, Mirrors, Glass Shelves, modern Shop Fronts, Improvements, etc.; plans prepared; estimates free. Mills, Shopfront, Shopfitting, and Glass Facia Works, 163-165 Old Street, London, E.C. 'Phone London Wall 550.

8/6 3 Years 4 Columns

Jay Mack's Ledger

with 10 minutes' weekly work gives yearly Sales; Purchases; Exes.; Short Cuts. Stocktaking, and Balance Sheet.

10/6 4 Years 5 Columns

On approb. on receipt of cheque. 6d. Booking Fee if returned.

Mack-Ivor, Hightown P.O., Crewe. | Ayrtons, Evans, Bleasdales, Raimes (Edin.) | AUSTRALIA—"C. & D." A. Elliotts. | FOREIGN—Evans (London).

TO WHOLESALE CHEMISTS, SHIPPERS, etc.

We compress tablets from your own ingredients or otherwise, plain or coated. Large quantities dealt with quickly. Superior Machinery and Scientific Control.

Lowest quotations for Cascara tablets in bulk.

R. GIBBINS & CO., 1 Birkbeck Road, Kingsland, LONDON, N.E.

DISPENSING BOTTLES & PHIALS.

CLEAR BLUE TINTED.—3 and 4 oz., 6 and 8 oz., 12 oz., 16 oz. Plain or graduated.
BEST QUININE, TINTED.—3 and 4 oz., 6 and 8 oz., 12 oz., 16 oz. Plain or graduated.
WHITE PHIALS.—½ oz., 1 oz., 1½ oz., 2 oz. Plain or teaspoons.
BLUE LOTION BOTTLES.—½ oz., 1 oz., 1½ oz., 2 oz., 3 oz., 4 oz. 6 oz., 8 oz., 12 oz.
PANEL BOTTLES.
We send six gross assorted or otherwise, carriage paid within seven miles, and to certain stations. Particulars on application.
CORKS.
Good quality. No advance in price: 6 and 8 oz. bottles, 9d. per gross in 6 gross bags. Vials 6d. per gross in 3 gross bags.

I. ISAACS & CO.,
106 MIDLAND ROAD, ST. PANCRAS, LONDON, N.W.
Or ISLINGTON BOTTLE COMPANY, 7 New Inn Yard, Tottenham Court Road, London, W.
Orders sent to either establishment have attention.
Established 100 Years.

WAR WANTS EXCHANGE.

The object of this section is to facilitate the interchange of pharmaceutical products which are scarce at present owing to the War, and which the inquirers have failed to obtain through the customary business channels.

TERMS

Minimum charge (including registration fee) of **1/-** for six words or less; **2d.** per word beyond, prepaid Inquiries are inserted with a registration number attached to each item, and replies will be communicated direct to the inquirers by the Information Department of "The Chemist and Druggist."

WANTED.

Principals having any of the following articles to dispose of are requested to notify the fact by postcard or otherwise **stating quantity and price** to

THE WAR WANTS EXCHANGE,

"The Chemist and Druggist," 42 Cannon Street, London, E.C.

Bromural powder or tablets (148/16)
Helmitol tablets (153/32)
Salvarsan .4 or over (148/16)
Salvarsan or Neo-salvarsan 48/53)

FOR DISPOSAL.

Bona-fide buyers of the following articles are requested to communicate their exact requirements promptly to us, and we shall place them in touch with sellers:—

Aspirin tablets grs. 5 300 (44/65)
Aspirin pulv. ½ lb. (44/65)
Bismuth carb. (152/26)
Bismuth salicylat 4 oz. (154/33)
Ferri et quin. cit. 2 lb. (155/4)
Gonosan capsules ⅙ doz. (50's) (154/33)
Hydroquinone 1 lb. (155/4)
Lin. bellad. meth. 4 lb. (154/33)
Phenacetin 3 oz. (44/65)
Phenacetin caff. tablets 3 doz. × 25's (151/27)
Phenazonum 2 oz. (154/33)
Pot. permang. 20 lb. (155/4)
Pyrogallic acid 1 lb. (155/4)
Quinine hydrochlor. 4 oz. (154/33)
Quinine sulph. ¼ lb. (44/65)
Resorcin 8 oz. (155/4) and 3 oz. (154/33)
Santonine 4 oz. (155/4)
Sodium salicylas. 2 lb. (44/65)
Sulphonal ¼ lb. (44/65)
Urotropine ½ lb. (44/65)

RUBBER SPONGES.

We have some 1 gross bags, assorted, to dispose of. **60/-** per bag, cash with order. GENUINE BARGAIN.

SHIRLEY BROS., Ltd., Whitecross Works, London, S.E.

THERE IS MONEY TO BE MADE

in the PHOTOGRAPHIC DEPARTMENT of your business, but the work must be well and quickly done. We are Experts, and return the work 9 hours after we receive it. Send for our List, and give us a trial.

STEAD & CO., Photographic Experts, DUKE STREET, BRIGHTON.

NAPHTHALINE BALLS

2 tons to offer in one lot, or in smaller parcels.

INQUIRIES SOLICITED.

HEMMINGS, 2 Scylla Rd., Peckham Rye, London, S.E.

EXCHANGE COLUMN

One halfpenny per word with name and address. One penny per word if we register the address and attach a number.
No advertisement inserted for less than 6*d.*

Price-lists, trade circulars, samples, and printed matter can in no case be forwarded, the Box numbers being intended exclusively for specific answers to particular advertisements. The Publisher reserves the right to open and refuse to forward any communications received which he may consider contrary to this rule.

FOR DISPOSAL.

DENTAL.

FOR sale, dental electric swing sign, also showcase; can be seen. 269 West End Lane, West Hampstead.

DRUGS AND CHEMICALS.

½ oz. atropin sulph. Knox, Burghead, Elginshire.

PHENACETIN, 8 oz., 30*s.*; resorcin, 4 oz., 20*s.*; phenol phthalein, 2 oz., 10*s.*; 1 lb. pot. iodid, 12*s.* lb. Banks, 356 Walworth Road.

WHAT offers? 1 lb. potass. ferridcyanide, 1 lb. aristol, 2 oz. Johnson's "Scalol." Furnival, Chemist, 32 Cambridge Avenue, Kilburn, N.W.

OFFERS invited.—Avery's fine dispensing balance, list price 135*s.*; 2 × 3 gall. pear-shape window carboys; 3 × 1 gall. ditto. "Pharmacist," 239 Roundhay Road, Leeds.

PROPRIETARY ARTICLES.

PESSARY mould (Maw), 2 dram, 6 hole; good condition; price 10*s.* 6*d.* Hepworth, Royland Road, Loughborough.

OPTICAL AND PHOTOGRAPHIC.

HALF-PLATE camera, 3 double-dark slides, with ½-plate carriers, R.R. and W.A. lenses, T.P. shutter; also 3-fold tripod stand, in canvas case, equal to new; cash offers. Jenkins, 137 Willesden Lane, N.W.

MISCELLANEOUS.

NINE Sparklet "B" syphons, 30 boxes "B" bulbs, two "C" syphons, 9 boxes "D" bulbs. Offers to Biggs, Chemist, Stourbridge.

12 DOZEN "Curit" corn cure, with showcards, etc.; excellent 1*s.* 1½*d.* selling line, requires extra 1½*d.* stamp duty; accept 3*s.* 6*d.* doz. Lewis, 175 Brownhill Road, Catford, London.

WANTED.

ADVERTISER requires dental requisites; chair, spittoon, etc. State price required, etc., 154/32, Office of this Paper.

OPTICAL books, Minor, Major, Chemists' books; send prepaid for valuation; cash offers per return. Gower, Bookseller, 41 Voltaire Road, Clapham, S.W.

WANTED, job or left-over stocks of large dummy cardboard cartons for window-show use; printing thereon might not matter. Address, 47/11, Office of this Paper.

NEST drawers, 9 ft., lockers or cupboards under, second-hand, in good condition; also counter with glass case front, 8 ft.; lowest price delivered to Biggs, Chemist, Stourbridge.

ALL CHEMISTS SHOULD STOCK ABDINE

THE GOLD MEDAL FRUIT DRINK.
Quick Seller. Big Profits. Quarter of a Century's Reputation.
"**ABDINE**" is the most popular Health Drink. Superior to all Mineral Waters. Sold in Packets, **2** for **2½d.**; Boxes of 13 Packets **1/3.**
Order through your Wholesale Drug House.
D. M'GLASHAN, M.P.S., Abdine Works, Westfield Road, EDINBURGH.
Wholesale Prices on Application

Printed for the Proprietors by SPOTTISWOODE, BALLANTYNE & CO. LTD., 1 New-street Square, and Published by the Proprietors at 42 Cannon Street, in the City of London.—*August* 19, 1916.

INGRAM'S

TRADE "Eclipse" MARK
REGD

HOT WATER BOTTLES

FITTED WITH INGRAM'S "ECLIPSE" STOPPER.
GUARANTEED NOT TO SLIP OR LEAK.



BRITISH MADE
BY
EXPERT BRITISH LABOUR

Size, inches	...	10x6	10x8	12x6	12x8	12x10	14x8	14x12	16x12
Approx. weight, ozs.		10½	11½	11½	12½	15	14½	18¾	21¼

Guarantee

Ingram's "Eclipse" Hot Water Bottles are personally examined and tested under strict supervision as to the Quality of Rubber, Workmanship, etc., and we assure our patrons that with careful use in any climate, and storage under reasonable conditions, these high-grade quality "Eclipse" Hot Water Bottles are warranted to give entire satisfaction, and will remain in a perfect state for a number of Years.

THE "ECLIPSE" HOT WATER BOTTLE IS EMBOSSED WITH THE FACSIMILE TRADE MARK AS ABOVE, WHICH IS A GUARANTEE OF QUALITY.

MADE IN ALL SIZES, and can be supplied with Jug or Loop handle, and fitted with Ingram's "Eclipse" Stopper, which is Guaranteed Not to Slip or Leak. This Stopper can be supplied with Cockburn's pattern attachment if desired.

PRICES OBTAINABLE AT ALL WHOLESALE HOUSES.

MANUFACTURERS—

Ingram's
LONDON

A. DE ST. DALMAS & CO.

Contractors to His Majesty's Government. **LEICESTER.** *(Established 1828.)*

— MANUFACTURERS OF —

MEDICAL PLASTERS

Spread Plasters. Adhesive, Belladonna, Soap Cerate, Roborans, Fleshcolour Adhesive, &c.
Hospital Strapping. On Holland, Pure Stout Calico, &c.
Porous Plasters. All kinds. On Cotton Cloth, Red Felt, White Kid, &c.
Rubber Adhesive Plaster. On Cotton Cloth or Holland—In Tins or on Spools.
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SURGICAL BANDAGES

Waterdressing, Fastedge, Calico, and Flannel Bandages, Elastic Web, Crêpe Velpeau, and Plaster of Paris Bandages.

THE LEICESTER "VARICO" LEG BANDAGE.
TRADE MARK.

RENDELL'S



SOLUBLE QUININE PESSARIES.

THE WORLD-WIDE REPUTATION that these Pessaries have obtained since their invention by W. J. Rendell in 1885 has induced unscrupulous persons to place upon the market worthless and injurious compounds, with colourable imitations of W. J. Rendell's labels. To distinguish the genuine Pessaries from these fraudulent concoctions, see that the Registered Trade Mark and Number, in ***RED INK,*** are upon each box thus:

Registered Trade Mark, without which none are genuine. No. 182,688.

W. J. Rendell No. 182,688

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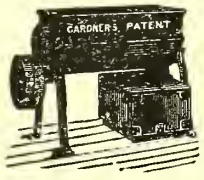
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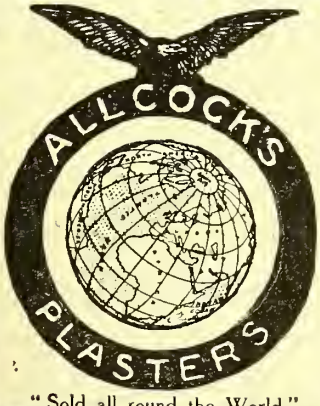
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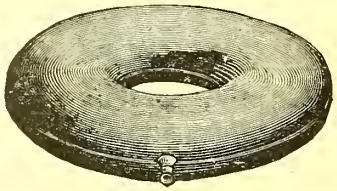


Fig. 1194.

BRITISH MAKE.

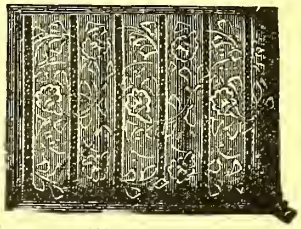


Fig. 1354.

Fig. 1194.—The **"EMPIRE,"** red India-rubber Air Cushion—

Diameter	14	15	16	17	18	19	20 in.
Each ...	6 6	7 0	8 0	8 6	10 0	11 6	12 6

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Each 4 3 | 4 9 | 6 0

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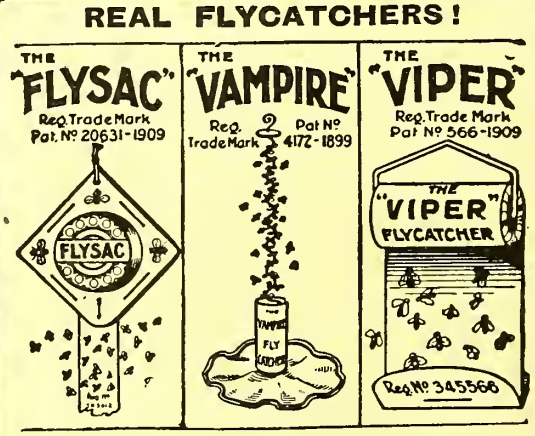
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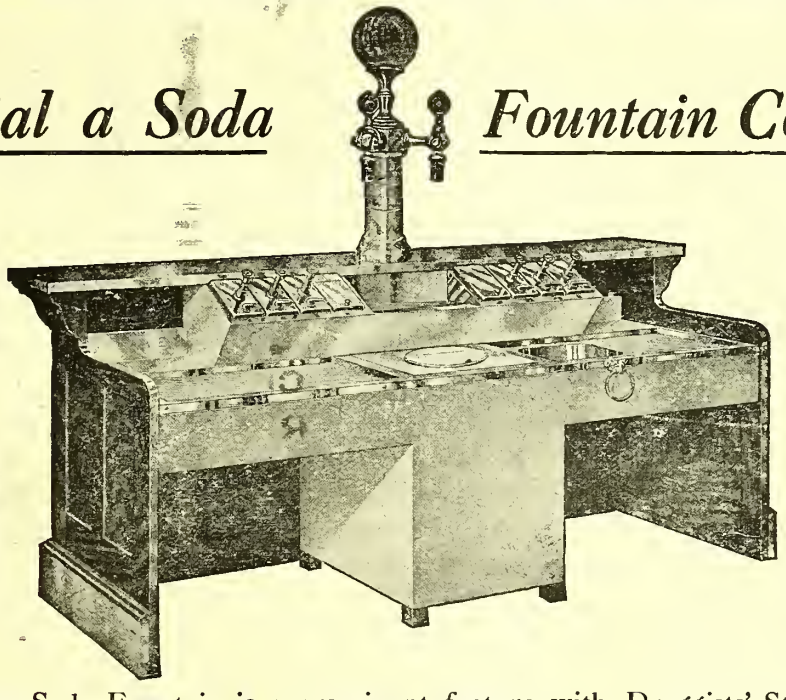
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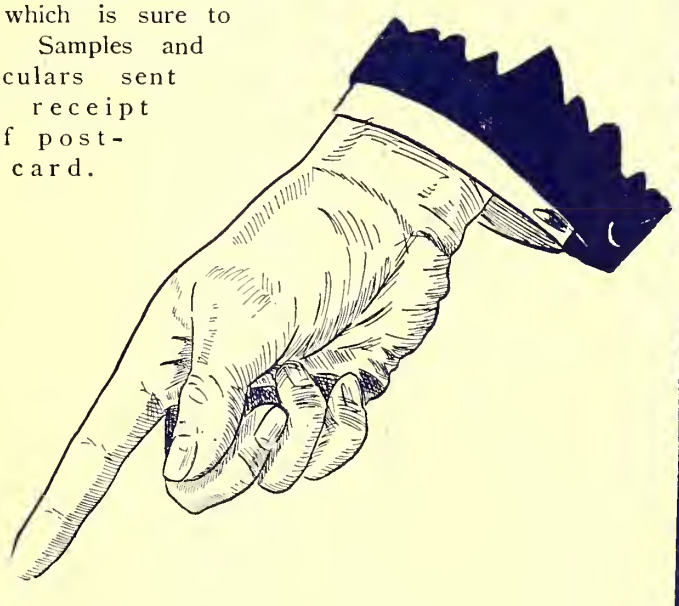
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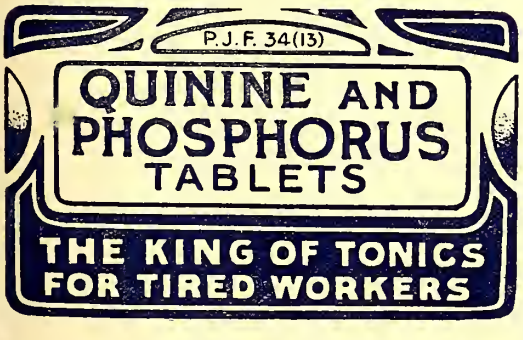
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